THE

FARMER'S HAND BOOK

AND GUIDE.

COMPILED AND EDITED BY

JOHN S. PEARCE & CO.,

LONDON, - ONTARIO.

LONDON, ONT.:
LONDON PRINTING AND LITHOGRAPHING CO.
1894.

INDEX.

THE

Farmer's Hand Book

AND GUIDE.

COMPILED AND EDITED BY

JOHN S. PEARCE & CO., LONDON, ONT.

INTRODUCTION

The importance of keeping a correct account of his business transactions and farm work is not appreciated, nor the attention given to it by farmers and dairymen that there should be. As a matter of economy and satisfaction, it would pay farmers five-hundredfold to devote more or less time to this work. If farmers, as a rule, did more head work, and used a pen and pencil more, they would be better and richer men. If you cannot do this work yourself, get your son or daughter to do it for you and pay them for their time; it will be the most satisfactory and interesting investment you ever made. It will induce thought; it will increase your knowledge of doing business; it will give you food for thought; it will give you positive proofs and help you to either confirm or change your own opinions along certain lines; it will put you in the way to understand your own business, and is the only way in which farming can and may be made profitable and dignified. In no way can a farmer, his son or daughter, be more profitably employed. If you, as a farmer, want or expect to take the social and intelligent position which the nature of your calling entitles you to take, you must do more thinking and figuring and less work.

Should this little work receive the attention and meet with the success we think it deserves, we shall continue its publication from year to year, and we promise that it will increase in value and importance as the years advance.

Yours faithfully,

JOHN S. PEARCE & CO.

ECLIPSES IN 1894.

In the year 1894 there will be two eclipses of the sun and two of the moon.

I. A PARTIAL ECLIPSE OF THE MOON, MARCH 21ST.—Visible in the early morning in the Central and Western portions of America.

II. AN ANNULAR ECLIPSE OF THE SUN, APRIL 5TH.—Visible throughout Asia.

III. A PARTIAL ECLIPSE OF THE MOON, SEPTEMBER 14TH.—Visible in America and Western Europe.

IV.—A TOTAL ECLIPSE OF THE SUN, SEPTEMBER 28TH.—Visible in the Central and Eastern portions of Africa and throughout the Indian Ocean.

The planet Mercury will cross the sun's disc on November 10th, making the external contact at 10h. 55m. 40s. a. m., Eastern Standard time; central at 1h. 34m. 23s. p. m., and last or external contact at 4h. 13m. 9s.

FIXED AND MOVABLE FESTIVALS.

NEW YEAR'S DAY	January	1
EPIPHANY	"	6
SEPTUAGESIMA SUNDAY	"	21
QUINQUAGESIMA—Shrove Sunday	February	4
SHROVE TUESDAY	"	6
ASH WEDNESDAY	"	7
QUADRAGESIMA	"	11
ST. DAVID'S DAY	March	1
ST. PATRICK'S DAY	"	17
PALM SUNDAY	"	18
GOOD FRIDAY	"	23
ANNUNCIATION—Lady Day	"	25
EASTER SUNDAY	"	25
EASTER MONDAY	"	26
LOW SUNDAY	April	1
ST. GEORGE'S DAY	"	23
ROGATION SUNDAY	"	29
ASCENSION DAY—Holy Thursday	May	3
PENTECOST—Whit Sunday	"	13
TRINITY SUNDAY	"	20
QUEEN'S BIRTHDAY	"	24
CORPUS CHRISTI	"	24
ASCENSION OF QUEEN VICTORIA	June	20
ST. JOHN BAPTIST DAY	"	24
ST. PETER AND ST. PAUL DAY	"	29
DOMINION DAY	July	1
MICHAELMAS DAY	Septem'r	29
ALL SAINTS' DAY	November	1
PRINCE OF WALES' BIRTHDAY	"	9
ST. ANDREW'S DAY	"	30
FIRST SUNDAY IN ADVENT	"	2
CONCEPTION	"	8
ST. THOMAS DAY	"	21
CHRISTMAS DAY	"	25

MEASURES AND WEIGHTS.

To Find the Number of Acres in a Body of Land.

RULE—Multiply the length by the width in rods, and divide the product by 160, carrying the division to two demical places if there is a remainder. The result will be the answer in acres and hundredths.

NOTE—When the opposite sides of a piece of land are of unequal length, add them together and take one-half for the mean length or width.

Bulk of One Ton of Different Substances.

23 cubic feet of sand make about one ton.
18 cubic feet of earth make about one ton.
17 cubic feet of clay make about one ton.

Comparative Value of Fuel.

To give, for instance, a certain quantity of heat would require 4 cords of hickory wood. To give the same amount would require of white oak, 4¾ cords; of soft maple, 7 1-5 cords; of pitch pine, 9 1-7 cords; of hard coal, 3½ tons; of soft coal, 5 tons.

Temperature for the Rising of Cream.

The temperature of the surrounding air has a great effect upon the time required for the rising of cream. Experiments have demonstrated that with the thermometer at 80 degrees all the cream will rise in 10 hours; at 77 degrees in 12 hours; at 68 degrees in 18 hours; at 50 degrees in 36 hours; at 45 degrees in 43 hours.

General Grass Seeding for Mowing.

Clover, Timothy, Red Top, } Together for one acre. } 6 pounds, 10 " 1 bushel, Timothy, or Clover, { 8 pounds. 12 "

Table Showing the Number of Pounds to the Bushel.

AS RECOGNIZED BY THE LAWS OF CANADA.

Wheat	60	Hungarian Grass Seed	48	Apples, green	56
Corn, shelled	56	Blue Grass Seed	14	Dried Apples	24
Corn, in the ear	70	Millet Seed	48	Dried Peaches	33
Rye	56	Red Top Seed	14	Corn Meal	48
Oats	34	White Beans	60	Bran	20
Barley	48	Castor Beans	46	Malt	38
Buckwheat	48	Peas	60	Stone Coal	80
Timothy Seed	48	Potatoes	60	Charcoal	22
Clover Seed	60	Sweet Potatoes	55	Salt	65
Flax Seed	56	Onions	57	Lime, unslacked	80
Hemp Seed	44	Turnips	55	Plastering Hair	8

A bushel contains 2150.4 cubic inches; a gallon, 231 cubic inches; a box 13x13 inches, and 12¾ inches deep, contains a bushel, or 2,154¾ cubic inches.

INTERESTING TABLES.

TABLE SHOWING THE AMOUNT OF HAY OR ITS EQUIVALENT PER DAY, REQUIRED BY EACH 100 POUNDS OF LIVE WEIGHT OF ANIMALS:

Working Horses	3.08 lbs.
" Oxen	2.40 "
Fattening Oxen	5.00 "
" " when fat	4.00 "
Milch Cows	from 2.25 to 2.40 "
Dry Cows	2.42 "
Young Growing Cattle	3.08 "
Steers	2 84 "
Pigs	3.00 "
Sheep	3.00 "

Various Experiments Give the Following Results:

A Horse will consume as much food, besides corn, as 8 sheep; a Cow, as 12 sheep; a Fatting Ox, as 10 Sheep; a three-year-old Heifer, as 8 Sheep; a two-year-old Heifer, as 6 Sheep; a one-year-old Heifer, as 4 Sheep; a Calf, as 2 Sheep.

TABLE SHOWING THE PROPORTION OF SOLID MATTER AND WATER IN 100 PARTS EACH OF THE FOLLOWING ARTICLES OF DIET.

	Solid Matter.	Water.		Solid Matter.	Water.
Wheat	87	13	Fish, average	20	80
Peas	87	13	Blood	20	80
Rice	86	14	Apples	18	82
Beans	86	14	Pears	18	82
Rye	86	14	Peaches	20	80
Corn	86	14	Carrots	13	87
Oat Meal	74	26	Beets	13	87
Wheat Bread	51	49	Milk	13	87
Mutton	29	71	Oysters	13	87
Chicken	27	73	Cabbage	8	92
Lean Beef	26	74	Turnips	7	93
Eggs	26	74	Water Melon	5	95
Veal	25	75	Cucumber	3	97
Potatoes	25	75	Butter	83	17
Pork	24	76			

TABLE SHOWING THE COMPARATIVE DIFFERENCE BETWEEN GOOD HAY AND THE ARTICLES MENTIONED BELOW, AS FOOD FOR STOCK— BEING THE RESULT OF EXPERIMENTS.

100 POUNDS OF HAY ARE EQUAL TO:

275	lbs. Green Indian Corn.	54	lbs. Rye.
400	" " Clover.	54	" Barley.
442	" Rye Straw.	46	" Wheat.
300	" Wheat Straw.	59	" Oats.
164	" Oat Straw.	45	" Peas and Beans, mixed.
180	" Barley Straw.	64	" Buckwheat.
153	" Pea Straw.	57	" Indian Corn.
200	" Buckwheat Straw.	68	" Acorns.
400	" Corn Stalks, dried.	105	" Wheat Bran.
201	" Raw Potatoes.	100	" Rye.
175	" Boiled Potatoes.	167	" Wheat, Pea and Oat Chaff.
339	" Mangel Wurzel.		
504	" Turnips.	179	" Rye and Barley, mixed.
300	" Carrots.	59	" Linseed Cake.

TABLE SHOWING THE WAGES FOR DAYS AT GIVEN RATES PER MONTH.

Rate.	$14	$15	$16	$17	$18	$19	$20	$21	$22	$23	$24	$25
Days. 1	.54	.58	.62	.65	.69	.73	.77	.81	.85	.88	.92	.96
2	1.08	1.15	1.23	1.31	1.38	1.46	1.54	1.62	1.69	1.77	1.85	1.92
3	1.62	1.73	1.85	1.96	2.08	2.19	2.31	2.42	2.54	2.65	2.77	2.88
4	2.15	2.31	2.46	2.62	2.77	2.92	3.08	3.23	3.38	3.54	3.69	3.85
5	2.69	2.88	3.08	3.27	3.46	3.65	3.85	4.04	4.23	4.42	4.62	4.81
6	3.23	3.46	3.69	3.92	4.15	4.38	4.62	4.85	5.08	5.31	5.54	5.77
7	3.77	4.04	4.31	4.58	4.85	5.12	5.38	5.65	5.92	6.19	6.46	6.73
8	4.31	4.62	4.92	5.23	5.54	5.85	6.15	6.46	6.77	7.08	7.38	7.69
9	4.85	5.19	5.54	5.88	6.23	6.58	6.92	7.27	7.62	7.96	8.31	8.65
10	5.38	5.77	6.15	6.54	6.92	7.31	7.69	8.08	8.46	8.85	9.23	9.62
11	5.92	6.35	6.77	7.19	7.62	8.04	8.46	8.88	9.31	9.73	10.15	10.58
12	6.46	6.92	7.38	7.85	8.31	8.77	9.23	9.69	10.15	10.62	11.08	11.54
13	7.00	7.50	8.00	8.50	9.00	9.50	10.00	10.50	11.00	11.50	12.00	12.50
14	7.54	8.08	8.62	9.15	9.69	10.23	10.77	11.31	11.85	12.38	12.92	13.46
15	8.08	8.65	9.23	9.81	10.38	10.96	11.54	12.12	12.69	13.27	13.85	14.42
16	8.62	9.23	9.85	10.46	11.08	11.69	12.31	12.92	13.54	14.15	14.77	15.38
17	9.15	9.81	10.46	11.12	11.77	12.42	13.08	13.73	14.38	15.04	15.69	16.35
18	9.69	10.38	11.08	11.77	12.46	13.15	13.85	14.54	15.23	15.92	16.62	17.31
19	10.23	10.96	11.69	12.42	13.15	13.88	14.62	15.35	16.08	16.81	17.54	18.27
20	10.77	11.54	12.31	13.08	13.85	14.62	15.38	16.15	16.92	17.69	18.46	19.23
21	11.31	12.12	12.92	13.73	14.54	15.35	16.15	16.96	17.77	18.58	19.38	20.19
22	11.85	12.69	13.54	14.38	15.23	16.08	16.92	17.77	18.62	19.46	20.31	21.15
23	12.38	13.27	14.15	15.04	15.92	16.81	17.69	18.58	19.46	20.35	21.23	22.12
24	12.92	13.85	14.77	15.69	16.62	17.54	18.46	19.38	20.31	21.23	22.15	23.08
25	13.46	14.42	15.38	16.35	17.31	18.27	19.23	20.19	21.15	22.12	23.08	24.04
26	14 00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00

TABLE OF WEIGHTS.

Showing estimated number of pounds of Barbed Wire required to fence space or distances mentioned, with one, two, or three lines of wire, based upon each pound of wire measuring one rod (12½ feet).

	1 LINE.		2 LINES.		3 LINES.	
1 Square Acre	50⅔	lbs.	101⅓	lbs.	152	lbs.
1 Side of a Square Acre	12⅔	"	25⅓	"	38	"
1 Square Half-acre	36	"	72	"	108	"
1 Square Mile	1280	"	2560	"	3840	"
1 Side of a Square Mile	320	"	640	"	960	"
1 Rod in Length	1	"	2	"	3	"
100 Rods in Length	100	"	200	"	300	"
100 Feet in Length	6 1-16	"	12⅛	"	18 3-16	"

Liquid Grafting Wax.

One pound of common resin is melted and one ounce of beef tallow is well stirred in it. When it is cooled a little, 8 ounces of alcohol are stirred in and will make a mass like honey. This wax applied to a graft hardens in a short time and is impervious to the weather.

Comparative Table of the Value of Various Fodders, Grain, etc., as Feed and as Fertilizers.

	Description of food.	Sugar. Lbs.	Sugar. Value.	Digestible Protein. Lbs.	Digestible Protein. Value.	Digestible Fat. Lbs.	Digestible Fat. Value.	Feeding value per 100 lbs.	Feeding value per ton.	Fertilizing value per ton.	Total value.
Hay.	Timothy 1st bloom	5.8	0.23	7.1	0.18	2.2	0.07	0.48	9.60	8.34	17.94
	Oats and Tares	33.2	0.17	8.4	0.21	1.6	0.04	0.42	8.40	8.74	17.14
	White Clover	33.9	0.17	10.0	0.25	2.4	0.08	0.50	10.00	9.60	19.60
	Alsike Clover	32.7	0.17	10.2	0.26	2.2	0.07	0.50	10.00	9.12	19.12
	Red Clover	38.1	0.19	7.7	0.20	1.5	0.05	0.44	8.80	8.96	17.76
	Mixed Hay	40.0	0.20	5.7	0.15	1.6	0.05	0.40	8.00	6.21	14.21
Corn and roots.	Large Ensilage Corn	11.0	0.06	0.9	0.03	0.4	0.02	0.11	2.20	. . .	....
	Potatoes	20.6	0.11	2.0	0.05	0.3	0.01	0.17	3.40	1.41	4.81
	Fodder Beets	10.0	0.05	1.1	0.03		0.01	0.09	1.80	1.09	2.89
	Sugar Beets	15.4	0.08	0.9	0.02	0.1	0.01	0.12	2.40	1.38	3.78
	Beets Pulp from diffusion.	3.3	0.02	0.4	0.01	0.1	0.01	0.04	0.80	0.52	1.32
	Carrots	10.8	0.06	1.2	0.03	0.2	0.01	0.10	2.00	0.89	2.89
	Swedish Turnips	9.5	0.05	1.2	0.03	0.1	0.01	0.09	1.80	1.00	2.80
Grain.	Rye	67.4	0.34	10.6	0.27	1.9	0.06	0.67	13.40	7.50	20.90
	Barley	63.9	0.32	9.2	0.23	2.3	0.07	0.62	12.40	5.65	18.05
	Oats	55.7	0.28	10.7	0.27	5.3	0.16	0.71	14.20	6.48	20.68
	Indian Corn	62.1	0.32	9.3	0.24	6.0	0.18	0.74	14.80	5.46	20.26
Various feeds.	Buckwheat	59.0	0.30	9.5	0.24	1.7	0.06	0.60	12.00	6.96	18.96
	Peas	52.5	0.27	20.8	0.52	1.9	0.06	0.85	17.00	11.95	28.95
	Tares	45.8	0.23	25.3	0.64	2.8	0.09	0.96	19.20	13.49	32.69
	Horse Beans	45.9	0.23	22.7	0.57	1.4	0.65	0.85	17.00	13.78	30.78
	White Beans	48.8	0.25	26.1	0.66	2.9	0.09	1.00	20.00	15.46	35.46
Various feeds.	Linseed	19.6	0.10	18.7	0.47	33.7	0.02	1.59	31.80	12.92	44.71
	Cotton Seed Meal	27.4	0.14	30.5	0.77	9.8	0.30	1.21	24.20	24.55	48.75
	Linseed Cake	37.3	0.19	24.9	0.63	8.8	0.27	1.09	21.80	17.05	38.85
	Wheat Bran	45.9	0.23	11.2	0.28	3.0	0.09	0.60	12.00	12.69	24.69
	Middlings	50.9	0.26	17.9	0.45	4.0	0.12	0.83	16.60	9.81	26.41
	Spent Grains	10.6	0.06	3.6	0.09	0.4	0 02	0.17	3.40	2.92	6.32
	Malt Germs	42.2	0.22	20.7	0.52	2.0	0.06	0.80	16.60	15.40	31.40
Cows' Milk.	Natural	4.0	0.02	4.0	0.10	4.0	0.12	0.24	4.80	2.24	7.04
	Skimmed	4.2	0.03	4.1	0.11	0.8	0.03	0.17	3.40	.....	.....
	Whey	4.4	0.03	0.8	0.02	0.3	0.01	0.06	1.20	.....	.....
Straw.	Winter Wheat	32.6	0.17	1.5	0.04	0.7	0.03	0.24	4.80	2.20	7.00
	Barley	36.2	0.19	2.1	0.06	0.7	0.03	0.28	5.60	2.22	7.82
	Oats	34.2	0.18	1.7	0.05	1.0	0.03	0.26	5.20	2.52	7.72
	Winter Rye	29.8	0.15	1.1	0.03	0.6	0.02	0.20	4.00	3.80	7.80
	Tares	29.0	0.15	3.8	0.10	0.5	0.02	0.27	5.40	7.18	12.58
	Peas	34.0	0.17	3.6	0.09	0.5	0.02	0.28	5.60	4.09	9.69
	Horse Beans	34.2	0.18	6.1	0.16	0.6	0.02	0.36	7.20	3.69	10.89
	Indian Corn	36.7	0.19	1.6	0.04	0.6	0.02	0.25	5.00	5.02	10.02
	Clover Haulms	25.0	0.13	4.7	0.12	1.0	0.03	0.28	5.60	8.06	13.66
	Dried Meat		....	72.8	1.80	12.0	0.36	2.16	43.20	.....	.....

This table is mainly republished from Jules Crevat's Book. The feeding values are taken from the average market prices in this province paid for hay, at $9.00 a ton. The fertilizing values are estimated according to the wholesale prices of similar fertilizers in the market, but suppose that no particle of the animal droppings is wasted.

Common Grafting Wax.

An excellent wax for grafting is made of equal parts of resin, beeswax, and tallow, melted together. The whole is stirred until pasty, when it is well worked by the hands, moistened with linseed oil. After it has been drawn and molded some time until it becomes tough, it is made into rolls in warm water and set away for use. Strips of cotton cloth dipped in the melted wax and made into a ball make the best bands for grafting and budding.

Nutrients in Food and Time of Digestion.

Below is given a table showing the amount of nutriment contained in some of the common articles of food, and the time required to digest them :—

Article.	Time of Digestion. Hrs.	Min.	Amount of Nutriment. Per Cent.
Rice, boiled	1		38
Soup, Barley, boiled	1	30	..
Apples, sweet, mellow, raw	1	30	10
Tapioca, boiled	2		..
Barley, boiled	2		..
Milk, boiled	2		..
Liver, beef, fresh, broiled	2		..
Eggs, fresh, raw	2		..
Milk, raw	2	15	7
Turkey, domestic, roasted	2	30	..
Cake, sponge	2	30	..
Beans, boiled	2	30	37
Parsnips, boiled	2	30	..
Cabbage, head, boiled	2	30	7
Oysters, fresh, raw	2	55	..
Beef, roasted	3		26
Mutton, fresh, roasted	3		30
Soup, Bean, boiled	3		..
Chicken Soup, boiled	3		..
Dumpling, Apple, boiled	3		..
Oysters, fresh, roasted	3	15	..
Pork, roasted	3	15	24
Sausage, fresh, broiled	3	20	..
Oysters, fresh, stewed,	3	30	..
Cheese, old, raw	3	30	..
Oyster Soup, boiled	3	30	..
Bread, wheat, fresh, baked	3	20	60
Turnips, flat, boiled	3	30	4
Potatoes, Irish, boiled	3	13	13
Eggs, fresh, hard boiled	3	30	..
Green Corn and Beans, boiled	3	45	..
Beets, boiled	3	45	..
Poultry, roasted	2	45	27
Sugar	3	30	96
Veal, roasted	4	00	25
Fish, boiled	2		20
Cucumbers, raw	.....		2
Butter	2	30	96

Rules for Farmers.

1. Do not over-crop yourself; or, in other words, do not undertake more than you can accomplish with ease.
2. Have a regular system in all you do, and do everything with a clear understanding as to result and effect.
3. Keep your lands well up to a good standard by a proper fertilizing and a judicious rotation of profitable crops.
4. Keep none but good stock, and see to it that said stock is kept in good condition.
5. Take good farm papers, together with a few standard farm books written by practical men, who deal only in facts.
6. Send and get our Seed Catalogue.

Gain in Cattle.

It takes eleven pounds of milk to add one pound of live weight to a calf; and an ox that weighs one thousand three hundred pounds will consume twenty-two pounds of hay in twenty-four hours to keep from losing weight. If he is to fatten, he must have just twice that quantity, when he will gain two pounds a day. Thus one pound live weight is equal to eleven pounds good hay. To obtain 50 cents a hundred for his hay, a farmer must sell fat steers at $5.50 per hundred pounds.

Three and a half pounds of milk are said to be equal to one pound of meat; and if we estimate a cow to give but 4,000 pounds of milk in a year, her product would be equal in food value to 1,000 pounds of meat, which would require a steer, under ordinary feeding, four years to produce; so that the cow produces as much return from her food in one year as a steer does in four years.

Animal Peculiarities.

Tortoises and turtles have no teeth.

All animals which chew the cud have cloven feet.

Both mandibles of the parrot's beak are movable, but most birds are able to move only one.

The horse has no eyebrows. The appearance of much white in the eye of a horse indicates a vicious nature.

The stork is partial to kittens as an article of food, and finds them an easy and wholesome prey; and the cats reciprocate by a love for young storks.

The frog, owing to its peculiar structure, cannot breathe with the mouth open, and if it were forcibly kept open the animal would die of suffocation.

Whalebone is found in the mouth of the whalebone whale, where it forms the substitute for the teeth, of which otherwise the animal is destitute.

Pigs are poor swimmers, their forelegs being set closely under them, and when they fall into the water they sometimes cut their throats with the sharp points of their cloven feet.

The eyes of hares are never closed, as they are unprovided with eyelids. Instead thereof, they have a thin membrane which covers the eye when asleep, and probably also when at rest.

The deer is furnished with supplementary breathing places in addition to the nostrils, and this would appear to be an extraordinary provision of nature giving the beast of the chase a freer respiration.

Fishes swallow their food hastily and without mastication, because they are obliged unceasingly to open and close the jaws for the purpose of respiration, and cannot long retain food in the mouth when quite shut.

The faculty the chameleon has of changing its color has been attributed to the protective instinct of the animal, by which it seeks to render itself less observable by enemies by assuming the color of the bed on which it lies.

The hump on the back of the dromedary is an accumulation of a peculiar species of fat, which is a store of nourishment beneficiently provided against the day of want, to which the animal is often exposed. The dromedary, or camel, can exist for a long period upon this lump without any other food.

THE WEATHER SIGNS.

RULES FOR GENERAL USE.

The Farmers' Club of the American Institute has issued the following rules for foretelling the weather. If farmers and others whose business is out of doors and depends upon the weather will study them closely, they will be able to guess the weather more accurately than most of the weather prophets:—

1. When the temperature falls suddenly there is a storm forming south of you.

2. When the temperature rises suddenly there is a storm forming north of you.

3. The wind always blows from a region of fair weather towards a region where a storm is forming.

4. Cirrus clouds always move from a region where a storm is in progress to a reign of fair weather.

5. Cumulus clouds always move from a region of fair weather to a region where a storm is forming.

6. Where cirrus clouds are moving rapidly from the north or north-east there will be rain inside of twenty-four hours, no matter how cold it is.

7. When cirrus clouds are moving rapidly from the south or south-east there will be a cold rain-storm on the morrow, if it be in summer, and if it be in winter there will be a snow-storm.

8. The wind always blows in a circle around a storm, and when it blows from the north, the heaviest rain is east of you: if it blows from the south, the heaviest rain is west of you: if it blows from the east, the heaviest rain is south; if it blows from the west, the heaviest rain is north of you.

9. The wind never blows unless rain or snow is falling within 1,000 miles of you.

10. Whenever heavy, white frost occurs, a storm is forming within 1,000 miles north or north-west of you.

Cooling Effects of Ice.

One pound of ice put into one pound of water at a heat of 174 degrees will make two pounds of water at 32 degrees. Thus 142 degrees of heat have been absorbed during the melting of the ice. This is called the latent heat of water.

Thus, one pound of ice will in melting cool one pound of water one hundred and forty-two degrees. Or

10 lbs. of water 14¼ degrees.

10 lbs. of milk from 60 to 45 degrees.

To cool 1,000 lbs. of milk from 60 to 45 degrees, use 100 lbs. of ice.

Facts Worth Knowing.

That salt fish are quickest and best freshened by soaking in sour milk.

That cold rain water and soap will remove machine grease from washable fabrics.

That fish may be scaled much easier by first dipping them into boiling water for a minute.

That fresh meat, beginning to sour, will sweeten if placed out of doors in the cool air over night.

That milk which has changed may be sweetened or rendered fit for use again by stirring in a little soda.

CALENDAR FOR DETERMINING THE PERIOD OF GESTATION.

The average duration of pregnancy is, with mares, 48½ weeks, or 340 days (extremes, 307 and 412 days); cows, 40½ weeks, or 283 days (extremes, 264 and 306 days); ewes and she-goats, 22 weeks, or 150 days (extremes, 146 and 157 days); sows, 16 weeks, or 112 days (extremes, 109 and 133 days); bitches, 9 weeks, or 63 to 65 days; cats, 8 weeks, or 46 to 60 days.

Hens sit 19 to 24, generally 21 days; turkeys and pea-fowls, 26 to 29 days; geese, 28 to 33 days; ducks, 28 to 32 days; pigeons, 18 days from last egg; canaries, 13 days from steady sitting.

The following table will greatly facilitate reckoning the probable time of birth:—

FREQUENCY AND DURATION OF HEAT IN FARM ANIMALS.

ANIMAL.	Duration of Heat.	If not impregnated, heat recurs after.	After coming in, heat recurs in.
Mare	Heat continues 1 to 6 days; the maximum 24 to 36 hours.	8 to 10 days.	9 to 14 days.
Cow		16 " 20 "	28 " 42 "
Ewe		17 " 20 "	42 " 185* "
Sow		20 " 40 "	42 " 56 "

*The time which it is customary to allow between lambing and the next service.

Suitable Age for Weaning.

Foals	12 to 16 weeks.	Lambs	12 to 16 weeks
Asses	12 " 16 "	Kids	8 " 10 "
Calves	10 " 12 "	Pigs	6 " 8 "

Weights of Cordwood.

	Lbs.	Carbon.
One cord of Hickory	4,468	100
" Hard Maple	2,864	58
" Beech	3,234	64
" Ash	3,449	79
" Birch	2,368	49
" Pitch Pine	1,903	43
" Canada Pine	1,870	42
" Yellow Oak	2,920	61
" White Oak	1,870	81
" Lombardy Poplar	1,775	41
" Red Oak	3,255	70

Amount of Oil in Seeds.

The amount of oil in seeds is calculated at:—

Kind of Seed.	Per ct. Oil.	Kind of Seed.	Per ct. Oil.	Kind of seed.	Per ct. Oil.
Bitter almond	55	Meadow hay	3½	Turnip seed	45
Barley	2½	Oat straw	4	White mustard	37
Clover hay	5	Oats	6½	Wheat bran	4
Hemp seed	19	Rape seed	55	Wheat straw	3
Indian corn	7	Sweet almond	47	Wheat flour	3
Linseed	17				

Things to Try.

Try popcorn for nausea.
Try cranberries for malaria.
Try a sun-bath for rheumatism.
Try ginger ale for stomach cramps.
Try clam broth for a weak stomach.
Try cranberry poultice for erysipelas.
Try a wet towel to the back of the neck when sleepless.
Try eating fresh radishes and yellow turnips for gravel.
Try buttermilk for removal of freckles, tan and butternut stains.
Try eating onions and horse radishes to relieve dropsical swellings.
Try taking your cod liver oil in tomato catsup, if you want to make it palatable.
Try hard cider—a wine-glass three times a day—for ague and rheumatism.
Try taking a nap in the afternoon if you are going to be out late in the evening.
Try breathing the fumes of turpentine or carbolic acid to remove whooping cough.
Try a cloth wrung out from cold water put about the neck at night for sore throat.
Try snuffing powdered borax up the nostrils for catarrhal "cold in the head."
Try walking with your hands behind you if you find yourself becoming bent forward.
Try a silk handkerchief over the face when obliged to go against a cold piercing wind.
Try planting sunflowers in your garden if compelled to live in a malarial district.

Mr. Downing's Choice of Apples.

Apples are the most valuable of fruits, and the varieties named below are all good for family use. A tree or two of each kind, well cared for, will give a supply from July to June, and a month or two longer with a little extra pains:—

1. Early Harvest.
2. Red Astrachan.
3. Fanny.
4. Primate.
5. Jersey Sweet.
6. Porter.
7. Peach-Pond Sweet.
8. Fall Pippin.
9. Mother.
10. Hubbardston Nonsuch.
11. Blenheim Pippin.
12. Rhode Island Greening.
13. Melon.
14. Sutton Beauty.
15. Baldwin.
16. Grimes's Golden Pippin.
17. Jonathan.
18. Northern Spy.
19. Newton Pippin.
20. Lady's Sweet.
21. Red Russet.

For those who raise especially for market, varieties should be selected that succeed best in the locality, which may be ascertained by inquiry of those who make orcharding a business and know the kinds most in demand in the markets they supply. Experienced growers for market say that a few sorts rather than many, give the most profit. For small gardens a few varieties grown as dwarfs on the paradise stock will supply a moderate family during the summer and autumn, for culinary uses and eating; Nos. 1, 3, 6, 7, 8 and 9 are good varieties for this purpose. Winter apples can generally be purchased more readily than summer and fall kinds.

Premonitory Symptoms of the Contagious and Eruptive Diseases.

The following are the premonitory symptoms of some contagious diseases:—

Chicken-Pox.—Fever, occasionally chills, vomiting, pains in the back and legs, and rarely convulsions. The eruption usually developing within twenty-four hours after the onset of these symptoms, and generally appearing first upon the trunk, either on the back or on the chest.

Diphtheria.—Chills, fever, aching pains in the back and limbs. In children there may be convulsions at the onset. Sore throat and difficulty in swallowing are usually early symptoms. Enlargement of the glands of the neck and a fetid breath are later symptoms.

Measles.—The early symptoms are those of a feverish cold. Shiverings, coryza, sneezing, running at the nose, redness of the eyes and lids, eyes painful to light, and cough generally sets in within twenty-four hours. Nausea, vomiting and headache are also symptoms frequently present.

Mumps.—Fever, pain and swelling just below the ear. This swelling increases so that the patient is unable to open the mouth, and speech and swallowing become difficult. Occasionally this disease is very severe and characterized by high fever, delirium and great prostration.

Scarlet Fever.—Fever, vomiting, and in children convulsions. The face flushed, the tongue furred, and the throat congested and sore. The rash usually develops on the second day, appearing first on the neck and chest.

Small-Pox.—In adults a chill, and in children a convulsion are common initial symptoms. Intense headache, severe pain in the back and vomiting are constant features. Delirium is frequently present.

Typhoid Fever.—Constant and severe headache, delirium, vomiting, diarrhœa, bleeding from the nose, pain in the back and limbs are the symptoms most often present at the onset of this disease.

Whooping Cough.—The early symptoms are those of an ordinary cold, slight fever, running at the nose, and a dry barking cough, usually of a spasmodic character. Later on, the coughing fit begins with a series of short coughs, ending with a deep inspiration producing the "whoop" so characteristic of the disease.

How to Measure Corn in a Crib, Hay in a Mow, etc.

This rule will apply to a crib of any kind. Two cubic feet of sound, dry corn in the ear will make a bushel shelled. To get the quantity of shelled corn in a crib of corn in the ear, measure the length, breadth and height of the crib, inside of the rail: multiply the length by the breadth and the product by the height: then divide the product by two, and you have the number of bushels in the crib.

To find the number of bushels of apples, potatoes, etc., in bin, multiply the length, breadth and thickness together, and this product by 8, and point off one figure in the product for decimals.

To find the amount of hay in a mow, allow 512 cubic feet for a ton, and it will come out very nearly correct.

How Grain Will Shrink.

Farmers rarely gain by keeping their grain after it is fit for market, when the shrinkage is taken into account. Wheat, from the time it is threshed, will shrink two quarts to the bushel or six per cent. in six months, in the most favorable circumstances. Hence, it follows that ninety-four cents a bushel for wheat when first threshed in August is as good, taking into account the shrinkage alone, as one dollar in the following February.

Corn shrinks much more from the time it is first husked. One hundred bushels of ears, as they come from the field in November, will be reduced to not far from eighty. So that forty cents a bushel or corn in the ear as it comes from the field is as good as fifty in March, shrinkage only being taken into account.

In the case of potatoes—taking those that rot and are otherwise lost—together with the shrinkage, there is but little doubt that between October and June the loss to the owner who holds them is not less than thirty-three per cent.

This estimate is taken on the basis of interest at 7 per cent., and takes no account of loss by vermin.

How to Mix Paints.

The following table, the source of which the Journal of Chemistry is unable to trace at this moment, though it vouches for its trustworthiness, will be found serviceable, especially for amateurs, as showing how simple pigments are to be mixed for producing compound colors:—

BUFF.—Mix white, yellow ochre, and red.
CHESTNUT.—Red, black, and yellow.
CLARET.—Red, umber, and black.
COPPER.—Red, yellow, and black.
DOVE.—White, vermillion, blue, and yellow.
DRAB.—White, yellow ochre, red, and black.
FAWN.—White, yellow, and red.
FLESH.—White, yellow ochre, and vermillion.
FRENCH GRAY.—White, Prussian blue, and lake.
GRAY.—White lead and black.
GOLD.—White, stone ochre, and red.
GREEN BRONZE.—Chrome green, black, and yellow.
OLIVE.—Yellow, blue, black, and white.
ORANGE.—Yellow and red.
PEACH.—White and vermillion.
PINK.—White, vermillion, and lake.
PURPLE.—Violet, with more red and white.
VIOLET.—Red, blue and white.

In the combination of colors required to produce a desired tint, the first-named color is always the principal ingredient, and the others follow in the order of their importance. Thus, in mixing a limestone tint, white is the principal ingredient, and red the color of which the least is needed. The exact proportions of each color must be determined by experiment with a small quantity. It is best to have the principal ingredient thick, and add to it the other paints thinner.

Sheep Skins.

A "Subscriber" asks for a recipe for dressing sheep skins or any other kind of skins, so as the hair will not fall off.—One part of arsenic to ten parts of alum, applied to the under surface of skins, will "cure them" and prevent hair falling.

Number of Shrubs or Plants for an Acre of Ground.

Dist. apart.	*No. of Plants.*	*Dist. apart.*	*No. of Plants.*
3 inches by 3 inches	696,960	6 feet by 6 feet	1,210
4 inches by 4 inches	392,040	6½ feet by 6½ feet	1,031
6 inches by 6 inches	174,240	7 feet by 7 feet	881
9 inches by 9 inches	77,440	8 feet by 8 feet	680
1 foot by 1 foot	43,560	9 feet by 9 feet	537
1½ feet by 1½ feet	19,360	10 feet by 10 feet	435
2 feet by 1 feet	21,780	11 feet by 11 feet	360
2 feet by 2 feet	10,890	12 feet by 12 feet	302
2½ feet by 2½ feet	6,960	13 feet by 13 feet	257
3 feet by 1 foot	14,520	14 feet by 14 feet	222
3 feet by 2 feet	7,260	15 feet by 15 feet	193
3 feet by 3 feet	4,840	16 feet by 16 feet	170
3½ feet by 3½ feet	3,555	16½ feet by 16½ feet	160
4 feet by 1 foot	10,890	17 feet by 17 feet	150
4 feet by 2 feet	5,445	18 feet by 18 feet	134
4 feet by 3 feet	3,630	19 feet by 19 feet	120
4 feet by 4 feet	2,722	20 feet by 20 feet	108
4½ feet by 4½ feet	2,151	25 feet by 25 feet	69
5 feet by 1 foot	8,712	30 feet by 30 feet	48
5 feet by 2 feet	4,356	33 feet by 33 feet	40
5 feet by 3 feet	2,904	40 feet by 40 feet	27
5 feet by 4 feet	2,178	50 feet by 50 feet	17
5 feet by 5 feet	1,742	60 feet by 60 feet	12
5½ feet by 5½ feet	1,417	66 feet by 66 feet	10

Quantity of Seed Required to Plant an Acre.

20 quarts	Beans, pole, Lima, 4 by 4 feet.
10 "	Beans, Carolina, prolific, etc., 4 by 3 feet.
10 "	Corn, sugar.
8 "	Corn, field.
3 "	Cucumber, in hills.
20 "	Flax, broadcast.
6 "	Grass, timothy with clover.
10 "	Grass, timothy without clover.
25 "	Grass, orchard.
20 "	Grass, red top or heads.
28 "	Grass, blue.
20 "	Grass, rye.
2 "	Pumpkin, in hills 8 by 8 feet.
8,000	Asparagus plants, 4 by 1½ feet.
25,000	Celery plants, 4 by ½ foot.
17,500	Pepper plants, 2½ by 1 foot.
3,800	Tomato plants.
2½ bushels	Barley.
1½ "	Beans, in drills 2½ feet.
2 "	Peas, in drills, short varieties.
1 to 1½ "	Peas, in drills, tall varieties.
3 "	Peas, broadcast.
8 "	Potatoes
1¾ "	Rye, broadcast.
1½ "	Rye, drilled.
1¼ "	Wheat, in drills.
2 "	Wheat, broadcast.
12 ounces	Cabbage, outside, for transplanting.
4 "	Cabbage, sown in frames.
8 ounces	Celery seed.
3 "	Tomatoes, in frames.
8 "	Tomatoes, seed in hills, 3 by 3 feet
9 pounds	Beets and mangold, drills, 2½ feet.
12 "	Broom corn in drills.
4 "	Carrot, in drills, 2½ feet.
13 "	Clover, white Dutch.
10 "	Clover, Lucerne.
6 "	Clover, Alsike.
12 "	Clover, large red with timothy.
16 "	Clover, large red, without timothy.
25 "	Corn, salad, drill, 10 inches.
3 "	Lettuce, in rows, 2½ feet.
35 "	Lawn grass.
3 "	Melons, water, in hills, 8 by 8 feet.
2 "	Melons, citrons, in hills 4 by 4 feet.
50 "	Onions, in beds for sets.
7 "	Onions, in rows for large bulbs
5 "	Parsnip, in drills, 2½ feet.
4 "	Parsley, in drills, 2 feet.
10 "	Radish, in drills, 2 feet.
3 "	Squash, bush, in hills, 4 by 4 feet.
3 "	Turnips, in drills, 2 feet.
3 "	Turnips, broadcast.

Readers of the Farmer's Hand Book should not fail to send for a copy of our Bulb Catalogue; issued in August of each and every year.

HOUSE PLANTS AND THEIR CARE.

Eternal vigilance is the price of success in the cultivation of flowers. In the preparation of the soil it is best to seek that which is neither too light and sandy nor too heavy and clayey. The former dries out too quickly, and the plants suffer for want of moisture, while the latter is apt to become sodden and sour, and the plants are drowned. The working roots of nearly all plants are fine and tender, even more tender than the fresh new upper growth, and they are easily injured or destroyed. On the other hand, if they are kept in a healthy growing condition, we are certain that we will have a good healthy top growth as a natural result.

Transplanting.

In transplanting from the garden, it is a good plan to cut around the plants three or four weeks before the time to take them up. This will cut off the long feeding roots, and cause the plant to throw out a new set of fine working roots, which when removed to the pots will go on growing, and there will be hardly any checking of the growth. If the top growth has been very rank it had better be shortened in, so that the tops and roots will be evenly balanced. They should be put in the shade for the first few days after transplanting; meanwhile they should be watered sparingly. This will apply to a large number of varieties, such as geraniums, heliotropes. etc.

Separate Sets of Plants for Winter and Summer.

The better way is to have a separate set of plants for winter use; these should be kept in pots all summer, and can be plunged into a bed of coal ashes or coarse sand in some partly sheltered situation; these should be allowed to bloom but little during the summer, thereby saving their strength for their winter's work. Re-pot in September into one-sized larger pots, trimming into a good shape. They are then ready for the window.

Watering Plants.

In watering house plants it is a good plan to water only when dry; when the surface does not show the true condition of the soil, the weight will, and by experience we will learn which are the thirsty ones, and those should have their wants well supplied. We must also be guided by the condition of the room and the temperature of the atmosphere. Our rule is to water daily, but much more sparingly on damp, cloudy days. Frequent overhead sprinklings, using a Goldman's or Scollay's Sprinkler, are very beneficial to almost all plants, with the exception of the ornamental-leaved varieties of begonias, especially those of the Rex family.

How to Keep Our Plants Free from Insects.

To keep our plants free from insects requires constant watchfulness. If we are faithful in our work, and take the first that make their appearance, it is comparatively easy. We have used sulpho-tobacco soap and soluble fir tree oil and found them both very effective. By dissolving in water according to direction, they can be applied to the most tender plants without injury to the foliage, using either Goldman's or Scollay's Sprinkler to apply it with.

To Root Cuttings.

The most successful way to root cuttings is to put them thickly in a saucer of clean river or lake sand, keeping the sand constantly wet, as once drying up will spoil the lot. Set the dish in a bright sunny window close to the glass. Experience will soon teach us the proper condition of the wood from which to make the cuttings. In soft wooded plants the young growth is used when it is in a brittle state; that is, when it will readily break if bent over with the thumb and finger. Rose cuttings are taken from plants just pushing their buds for blooming; they then acquire a ripeness suitable for rooting. After the cuttings are rooted, they should be potted separately into small pots and kept shaded for a few days.

Temperature.

In regard to the temperature, it is next to impossible to keep twenty or thirty different varieties of plants in the same temperature and have them all do well. We all know that in a room the temperature near the floor is much lower than that near the ceiling. The difference is much greater than one would at first thought suppose. Now, by taking advantage of this, by placing such plants as thrive best where it is cool near the floor, and those requiring the most heat higher up, we may succeed in growing some of both classes in the same window.

Tobacco—To Cultivate.

To raise tobacco, select a sheltered situation, where the young plants can receive the full force of the sun; burn over the surface of the ground early in spring (new land is best), rake it well, and sow the seeds; have a dry, mellow, rich soil, and after a shower, when the plants have got leaves the size of a quarter-dollar, transplant as you would cabbage plants, three and one-half feet apart, and weed out carefully afterward. Break off the suckers from the foot-stalks, as they appear; also the tops of the plants when they are well advanced, say about three feet high, except those designated for seed, which should be the largest and best plants. The ripeness of tobacco is known by small dusky spots appearing on the leaves. The plants should then be cut near the roots on the morning of a day of sunshine, and should lie singly to wither. When sufficiently withered, gather them carefully together, and hang them up under cover to cure and prepare for market.

How Deep in the Ground to Plant Corn.

The following is the result of an experiment with Indian corn. That which was planted at the depth of :—

$\frac{1}{8}$ inch, sprout appeared in	8	days.
1 inch, sprout appeared in	8½	"
1½ inch, sprout appeared in	9½	"
2 inches, sprout appeared in	10	"
2½ inches, sprout appeared in	11½	"
3 inches, sprout appeared in	12	"
3½ inches, sprout appeared in	13	"
4 inches, sprout appeared in	13½	"

The more shallow the seed was covered with earth, the more rapidly the sprout made its appearance, and the stronger afterward was the stalk. The deeper the seed lay, the longer it remained before it came to the surface. Four inches was two deep for the maize, and also too deep for smaller kernels.

Language of Flowers.

FLOWERS.	SENTIMENTS.
Acacia	Concealed love.
Almond	Hope.
Apple-Blossom	Preference.
Arbutus, Trailing	Welcome.
Bell Flower	Gratitude.
Box	Constancy.
Calla Lily	Feminine beauty.
Cedar	I live for thee.
China Aster	I will think of it.
Chrysanthemum, Rose	I love.
Clover, Red	Industry.
Corn	Riches.
Cowslip, American	You are my divinity.
Daffodil	Chivalry.
Dahlia	Forever thine.
Daisy, Garden	I partake your sentiments.
Daisy, White	Innocence.
Daisy, Wild	I will think of it.
Elm, American	Patriotism.
Forget-me-not	True love.
Fuschia, Scarlet	Taste.
Geranium, Apple	Present preference.
Geranium, Ivy	Your hand for the next dance.
Geranium, Rose	Preference.
Gillyflower	Lasting beauty.
Golden Rod	Encouragement.
Hawthorn	Hope.
Heliotrope, Peruvian	I love you; Devotion.
Honeysuckle	Bond of love.
Horse-chestnut	Luxury.
Hyacinth	Jealousy.
Mint	Virtue.
Morning Glory	Coquetry.
Myrtle	Love.
Oats	Music.
Orange	Generosity.
Pansy	Think of me.
Pink	Pure affection.
Pink, Red	Pure, ardent love.
Rose, Moss	Superior merit.
Rose, Tea	Always lovely.
Rose, White	I am worthy of you.
Snowball	Winter.
Tuberose	Dangerous pleasures.
Verbena	Sensibility.
Violet, Blue	Love.
Violet, White	Modesty.

Guano—Test for its Purity.

The weight affords the easiest test for the purity of guano. A bushel of pure Peruvian guano, according to most authorities, should weigh almost exactly seventy pounds. If heavier than seventy-three pounds, it is adulterated with clay, sand, marl, or some other impurity.

TO DESTROY THE CODLING MOTH.

Prof. Cook gives illustration and description of the codling moth, as follows:—

The moth, F and G, is accurately represented in the picture in form and size. The main color is gray, flecked with darker dots and bars, and with a characteristic copper-colored spot at the end of its front wings. This spot will always enable one to distinguish the moth. In May, about two weeks after the blossoms appear, the female moth commences to lay eggs in the calyx of the blossoms, B. These soon hatch, when the minute larva (shown full grown, E) eats into the apple and feeds upon the pulp around the core, filling the space with its fecal filth.

The whitish larvæ attain their full growth in about four weeks. This period will be lengthened by cold, and shortened by heat. When mature, the larva leaves the apple, which may have fallen to the ground, and seeks a secluded place in which to spin its cocoon, I, and pupate. The pupa or chrysalis, D, is much like those of other moths. The pupæ of the June and July larvæ are found in the cocoons soon after the latter are formed, while those of the autumn larvæ do not pupate till spring, but pass the winter as larvæ in the cocoons. The eggs of the second brood are laid in July, August and September. The larvæ feed in autumn and often till mid-winter, while, as just stated, they do not pupate till spring.

Professor Cook prefers London purple to Paris green because it is cheaper and easier to mix in the water. The mixture is as follows: I mix the powder one pound to 100 gallons of water. It is best to wet the powder thoroughly and make a paste before putting into the vessel of water, that it may all mix, and not form lumps. Always keep the liquid well stirred. One common pail of the liquid will suffice for the largest tree. For a large orchard a common barrel should be used, drawn in a wagon. I prefer to have the barrel stand on end, with a close movable float with two holes through it, one for the pipe or hose from the pump, and the other for a stirrer. If very large orchards are to be treated, a good force pump should be fastened to the barrel. This apparatus is manufactured by John S. Pearce & Co., London, Ont. Write for particulars. The spray may be caused by a fine perforated nozzle or a graduating nozzle. The finer it is the less liquid will be required. The important thing is to scatter the spray on all the fruit, and get just as little on as possible. The larva is killed by eating the poison, and we find that the faintest trace suffices for the purpose.

The danger from this practice I have found to be nothing at all. Of course we should not turn stock into an orchard till a heavy rain has washed the poison from all herbage under the trees.

Fungous Disease of the Grape.

Powdery Mildew on the Grape causes the greatest injury on the Pacific Coast, where it is known to all vine growers as Oidium.

REMEDIES.—Sulphur is an infallible remedy. To protect the flowers and young fruit from the mildew, applications of sulphur should be made when they are forming. After this dustings at intervals of two weeks will hold the fungus in check. Whenever possible the sulphur should be applied during hot sunshine, as the fumes which destroy the spores of the mildew are given off rapidly at this time.

The Peach.

Peach Curl occurs in nearly all parts of the United States, and is much worse some seasons than others. On this account it is more difficult to treat. We never know when to expect it, and are therefore not able to adopt preventive measures.

REMEDIES.—With our present knowledge, we can only recommend spraying with ammoniacal solution, half strength, or, in other words, three pints of the concentrated fluid to 100 gallons of water. If the disease is every year prevalent, as it is in parts of California, the first treatment should be made just as the leaves start. Others should follow at intervals of ten days until four sprayings in all have been made. When the appearance of the disease is uncertain the foliage should be watched, and if the curl manifests itself, begin immediately the application of the ammoniacal solution, half strength. Make three or four sprayings of this at intervals of ten days.

The Cherry.

Leaf Blight is often quite destructive in the nursery, attacking the leaves as soon as they appear and causing them to fall in midsummer.

REMEDIES.—Treat the same as recommended for leaf blight of the pear. In case, however, it is not found convenient to use Bordeaux mixture, the ammoniacal solution will answer as well. In the orchard, leaf blight often causes serious damage, especially in Central and Western New York. Treatments here should begin as soon as the leaves are formed and be continued at intervals of ten or twelve days until five or six sprayings have been made.

The Plum.

Leaf Blight occurs in both nursery and orchard.

REMEDIES.—The remedies recommended for cherry leaf-blight should be adopted here.

The Pear.

Scab of the pear is caused by a fungus similar to that which affects the apple.

REMEDIES.—About the time the fruit is forming make the first treatment, using ammoniacal solution. In ten days make a second treatment, following this by a third fifteen days later. By this time the fruit will have reached sufficient size to withstand the attacks of the fungus.

The Gooseberry.

Powdery Mildew, or Mildew, as it is usually called, occurs wherever the gooseberry is grown. It attacks the young growth, covering it with a thick, felted, greenish coat. The fruit is also frequently attacked, the surface being completely covered with the cobweb-like threads of the fungus.

REMEDIES.—Spray the plants as soon as growth starts with a solution made by mixing ½ an ounce of the concentrated liver of sulphur fluid in 5 gallons of water. Repeat the treatment every ten or twelve days until seven or eight in all have been made. Aside from the labor, the cost of the treatment is very little. With suitable spraying machines, such as we describe in our Spray Pump Catalogue, large plants can be sprayed in a few minutes.

Spraying Fruit Trees.

FARMERS MUST COME TO IT—PAST SEASON'S EXPERIENCE—HOW IT IS DONE AND WHEN.

Farmers must meet the new occasions, be prepared for new duties, or they will not keep up with the procession, and to be "left" in these days means no profit, no success.

"I don't believe in it, it's ag'in nature," said an old friend several years ago when we bought our first spraying outfit for use on our orchards to destroy the pest slugs.

"It's ag'in nature," said and thought the old farmer when fanning mills to clean up grain were introduced, and one good old preacher is on record as preaching "ag'in" the fanning mill, "because," he said, "when God wishes to send a wind to clean up the farmer's grain, he'll send it, and man has no right to make a machine to manufacture wind."

I believe in spraying, for I have tried and proven it. In many portions of our country to-day it is just as much a necessity as is underdraining, or fertilizing, or killing potato bugs.

I have upwards of 5,000 fruit trees on my "Fruitvale Farm." We sprayed our apple trees in one orchard of 800 trees three times last spring and, curious as it may sound in this year of a short crop, we had some trees so full of apples that the branches broke down.

Spraying may not protect against all effects of a late frost or long continuous rains, but it *helps*. Anything that strengthens a tree or plant in one direction increases its resistant powers in another.

We have sprayed for the codling moth and we have succeeded, and we are getting into the way of spraying for the leaf rust or blight on the leaves of apples and pears, *and it pays*.

For the codling moth, one pound of London purple to two hundred gallons of water, put on with one of "The I. X. L. Automatic Spray and Force Pumps," manufactured by J. S. Pearce & Co., of London, Ont., than which we have never seen a better. Rig the pump on one barrel and load on the farm wagon, with a boy to drive and a good man at the pump. Drive slowly, not stopping, pass up one side of a row of trees, throwing the spray on that side (one-fourth of the tree at least), come back on the other side of the *same row*, and you have sprayed two sides. When all the rows are finished one way, then go up and down the rows *the other way*, just as if you were plowing corn "to the hill;" plowing both ways you would pass each hill four times, and as you drive slowly past each tree you have a chance at all four sides.

Give the first spraying just as the blossoms have faded, the second a week after, and the third ten days after the second. You will see good results the first year, and still better the next year after.

Read up and study this subject of spraying, and before next spring get a good spraying apparatus and go to work. It will pay *every time*.

Directions for Preparing Fungicides.

Bordeaux Mixture.—Dissolve 8 pounds of copper sulphate or blue vitroil in 10 gallons of water. In a tub or some similar vessel slake 3 pounds of good fresh lime. When the lime is slaked add sufficient water to make a thick whitewash. Then pour the solution of copper sulphate into a barrel holding 45 gallons—more or less—and slowly add the whitewash, straining through a gunny sack to remove small sticks, twigs, bits of unslacked lime, etc. Stir thoroughly and the mixture is ready for use.

The powdered copper is always preferable to the crystals, as it dissolves much more readily and costs very little more.

Kerosene Emulsion.—In making the kerosene emulsion for spraying trees for lice, be sure and follow the correct method:—Dissolve in 2 quarts of water 1 quart of soft soap or ½ lb. of hard soap by heating to the boiling point. Then add 1 pint of kerosene oil and stir violently for from three to five minutes. This may be done by taking a common force pump and putting the end of the hose back into the mixture again. This mixes the oil permanently, so that it will never separate, and it may be diluted easily at pleasure. This mixture should be diluted to twice its bulk with water, or about 14 times as much water as kerosene. The kerosene emulsion is successful in destroying cattle lice and sheep ticks, as well as all varieties of plant lice.

Does it Pay to Combat Plant Diseases by Spraying?

Spraying for such plant diseases as the leaf-blight of the pear and quince, pear and apple scab, the powdery mildews, the mildew and rot of the grape, and the rot of the potato, will yield a handsome profit, if rightly done, for all labor and money expended.

Here is an example:—Eight applications of the Bordeaux mixture were made to 203 grape vines to prevent rot, at a total cost of $6.51. Value of the product saved by the application, $32.40. Profit, $25.89, or 397 per cent.

Another case is that of a grape-grower in New York who sprayed his vineyard of 8,450 vines seven times. The total cost, including the spraying pump, was $112.52. The yield of grapes was 53,430 pounds, which sold for $2,181.39. Fifty vines left untreated yielded 40 pounds, which for the vineyard would make a yield of only 6,700 pounds, and that of inferior fruit. Estimated profits gained by the treatments, $1,800 over and above all expenses.

Two successive years' treatment with the Bordeaux mixture increased the yield in one case from 1-5 of a pound per vine to 8.47 pounds per vine.

I could bring before you many such cases, but this is enough for the present purpose. They show that spraying pays a handsome profit.

Solution of Ammonical Carbonate of Copper.

Into a vessel having a capacity of about 1 gallon, pour 1 quart of ammonia (strength, 20° Baume); add 3 ounces of carbonate of copper; stir rapidly for a moment and the carbonate of copper will dissolve in the ammonia, forming a very clear liquid. For use, dilute to twenty-five gallons.

Eau Celeste, Modified Formula.

Dissolve 4 pounds of copper sulphate in 10 or 12 gallons of water. Add 3 pints of strong ammonia, dilute to 50 gallons, and add 5 pounds of common washing soda. Stir thoroughly and the solution is ready for use. This may be used in place of the two mixtures mentioned above, but no special advantage is claimed for it over either of the others.

BEE-KEEPING.

Bee-keeping is a science having for its object the attainment of a correct knowledge of all that pertains to the habits and instincts of these wonderful insects.

Therefore, to make the pursuit both pleasant and profitable, we must possess the requisite knowledge of the laws that govern these industrious creatures.

WHEN TO COMMENCE.

Early in the spring is the best time to begin, and thus secure an increase of bees as well as honey.

HOW MANY COLONIES TO BEGIN WITH.

Purchase a colony from some reliable breeder or dealer, and, in order to get experience, increase from one to two colonies, not more.

WHAT KIND OF BEES TO GET.

Some prefer to purchase black bees, but the best satisfaction is obtained by securing a good, strong Italian colony in the spring. Such will, in a few seasons, pay for themselves, thus proving the cheaper in the end. One such colony is worth two of the former.

WILL BEES INJURE FRUIT?

Bees never puncture fruit, and unless the skin has been broken by other insects or birds they never molest it.

WHAT HIVE TO USE.

The Rev. L. L. Langstroth, in 1852, invented a hive called the "Langstroth," which has completely revolutionized bee-keeping everywhere. With this movable frame hive all combs can be taken out and replaced or exchanged with other hives without the least detriment to the bees. In fact, the movable frame makes the bee-keeper "the master of the situation."

THE PRODUCTION OF CHOICE HONEY.

In no country on the face of the earth is honey produced, either in ancient or modern times, that can excel, or even equal, that produced in Canada.

Heretofore it was a luxury enjoyed only by a few, but it has now taken its place among the staple articles in general use.

Improvements in the management and culture, as well as increased production, haee brought the prices down to that which can be afforded by every family.

MANAGEMENT OF COMB HONEY.

Comb honey in boxes should be taken from the hive as soon as it is finished or as soon thereafter as possible.

No one can expect to sell his honey for the highest market price if he allows it to stay in the hive for weeks after it has been sealed over, allowing the bees to give the combs a dirty yellow color by constantly travelling over it.

SIMPLE REMEDIES.

Half a teaspoonful of common salt dissolved in a little cold water, and drank, will immediately relieve "heart-burn" or dyspepsia. If taken every morning before breakfast, increasing the quantity gradually to a teaspoonful of salt and a tumbler of water, it will in a few days cure any ordinary case of dyspepsia, if at the same time due attention is paid to the diet. There is no better remedy than the above for constipation. As a gargle for sore throat it is equal to chlorate of potash, and is entirely safe. It may be used as often as desired, and if a little is swallowed each time it will have a beneficial effect on the throat by cleansing it and by allaying the irritation. In doses of one to four teaspoonfuls in half pint to a pint of tepid water, it acts promptly as an emetic; and in cases of poisoning is always at hand. It is an excellent remedy for bites and stings of insects. It is a valuable astringent in hemorrhages, particularly for bleeding after the extraction of teeth. It has both cleansing and healing properties, and is therefore a most excellent application for superficial ulcerations.

MUSTARD is another valuable remedy. No family should be without it. Two or three teaspoonfuls of ground mustard stirred into half pint of water acts as an emetic very promptly, and is milder and easier to take than salt and water. Equal parts of ground mustard and flour or meal, made into a paste with warm water, and spread on a thin piece of muslin, with another piece of muslin laid over it, forms the often indispensable "mustard plaster." It is almost a specific for colic, when applied for a few minutes over the "pit of the stomach." For all internal pains and congestions, there is no remedy of such general utility. It acts as a counter-irritant, by drawing the blood to the surface; hence in severe cases of croup a small mustard plaster should be applied to the back of the child's neck. The same treatment will relieve almost any case of headache. A mustard plaster should be moved about over the spot to be acted upon, for if left too long in one place it is liable to blister. A mustard plaster acts as well when at considerable distance from the affected part. An excellent substitute for mustard plasters is what is known as "Mustard Leaves." They come a dozen in a box and are about four or five inches in size; they are perfectly dry, and will keep for a long time. For use, it is only necessary to dip one in a dish of water for a minute and then apply it.

COMMON BAKING SODA is the best of all remedies in cases of scalds and burns. It may be used on the surface of the burned place, either dry or wet. When applied promptly, the sense of relief is magical. It seems to withdraw the heat and with it the pain, and the healing process soon commences. It is the best application for eruptions caused by poisonous ivy and other poisonous plants, as also for bites and stings of insects. Owing to colds, over fatigue, anxiety and various other causes, the urine is often scanty, highly colored, and more or less loaded with phosphates, which settle to the bottom of the vessel on cooling. As much soda as can be dipped up with a ten cent piece, dissolved in half a glass of cold water and drank every three hours, will soon remedy the trouble and cause relief to the oppression that always exists from interruption of the natural flow of urine. This treatment should not be continued more than twenty-four hours. We

have no more space to devote to this subject now; but it is one of universal interest and we shall continue it. We shall endeavor to show that most of the diseases and accidents that are constantly occurring, could be remedied or avoided by resorting to such remedies and appliances as are to be found in every home.

EMERGENCIES.

There should be in every family the following supplies and medicines:—

Cotton bandages, from one to two inches wide, rolled tightly, like ribbon or tape, but without any block inside; old soft linen (handkerchiefs), old cotton, lint, surgeon's plaster, and a clean, fine sponge; Epsom salts (dose, one tablespoonful in water), lime-water, magnesia, aromatic spirits of ammonia (dose thirty drops to a teaspoonful in a wine-glass of water), brandy and sweet-oil. Have these and all other medicines well corked, *plainly labeled*, and *accessible*.

As a rule, medicines compounded from physicians' prescriptions should not be allowed to accumulate, nor remain long on hand. It is better to throw them away, and, if they are required again, get the medicine freshly compounded. Every package of *poison* should be very plainly labeled, and have attached to it a package of an antidote. If poisons are put in bottles with a few pins thrust through the corks from the under side, with points projecting, danger of their being mistaken for other bottles in the night is avoided.

BLEEDING.—If the blood is bright scarlet, and comes in jets (intermittingly), an artery has been cut. Firm pressure must be applied at once *above* the wound—*i. e.*, between it and the heart.

If the arm is cut, the artery may be compressed near the shoulder on the inner side of the large muscle on the front of the arm (biceps). If the leg is cut, the artery must be secured on the inside of the groin, which requires very firm pressure. Unless you can find the right place *readily*, thrust a cloth or one or more fingers into the wound, and press on the cut end of the artery. Do not relax pressure until a doctor has come, or the artery has been secured above by any person. An artery can be detected by the *pulse*, as on the temples, on the throat just back of the windpipe, etc. If the artery which has been wounded is firmly pressed with the finger above the cut, the person with his finger *in the wound* will cease to feel any pulse. Having found the artery in this way, roll up a handkerchief, tie it loosely around the limb, put a small stone or the knot on the spot where the artery is, and with a stick twist up the handkerchief tightly till the stone or knot presses sufficiently to stop the flow in the artery. The artery at the thigh, however, cannot be controlled in this way. Even if the wounded person is apparently dead, do not give up pressure till the doctor comes. The flowing of the blood is a sign of life, and prolonged unconsciousness may result either from the loss of blood or simply from fright, and is helpful, as it tends to diminish the flow of blood.

If the blood is dark and comes in a steady stream, a vein is severed. Apply pressure *below* the wound—*i. e.*, on the side farthest from the heart, or, if necessary, compress the vein by putting the finger in the wound.

Slight cuts should be allowed to bleed for half a minute, then dip in cold water, or apply ice, till the bleeding has nearly ceased. A little alum or tannic acid in solution will stop troublesome bleeding promptly, but should not be used if veins of considerable size have been cut. Be sure that no fragments of glass, wood, etc., are left in the wound; draw the edges closely together with surgeon's plaster or sticking-plaster, and bandage if necessary. Care in drawing the wound together will sometimes save a bad scar.

Nose-bleed.—A moderate nose-bleed may be beneficial, and give relief from headache. If profuse or long-continued, keep the head erect, and put ice or cold water on the bridge of the nose and nape of the neck. A linen rag stuffed into each nostril will be helpful. The clothing should be loose around the neck.

Bleeding from the Lungs.—The blood is frothy and small in quantity. Give small pieces of ice to be swallowed whole. Keep the head and shoulders raised.

Bleeding from the Stomach.—The blood comes in larger quantity than from the lungs, and is vomited up. Put a mustard-plaster over the stomach, and give cracked ice as above.

BROKEN BONES.—Move the patient with the greatest care. Support the limb in a natural position with wads, and avoid all unnecessary movements. Do not delay in calling a surgeon.

BURNS.—If the clothing takes fire, the person should throw himself down at once. Smother the flame with a blanket, rug, table cover, or clothing. If nothing of the kind is at hand, roll on the floor and smother the fire in that way, but do not fan it by running.

For severe scalds, cover the part with cooking soda and lay a wet cloth over it. *If the skin is destroyed,* the parts must be at once protected from the air. Shake vigorously together in a bottle, about one part by bulk of linseed-oil and two parts of lime water, and apply the mixture, or use sweet-oil, collodion, cosmoline, etc. If the patient suffers from prostration, give hot brandy-and-water, or other stimulants.

CHOKING.—Hold the head low and slap the back just below the neck. When anything lodges in the throat, do not push it down. Send for the doctor. A little child may be held by the legs, head down, for an instant, and then a slight jerk or blow on the back will often expel what causes the trouble.

Hard substances in the ear should not be meddled with, but left for the doctor to remove.

To remove an insect from the ear, lay the patient down and pour in tepid water or olive-oil.

DROWNING.—Avoid all delay. Shelter, warmth, and stimulants are secondary matters; the only chance of life is to keep up artificial respiration. Before natural breathing is restored do not let the patient lie on his back, unless some one holds the tongue forward. Otherwise it may close the windpipe and strangle the patient. Lay the body on the ground face down. Bestride the hips, clasp your hands under the abdomen and so raise the trunk somewhat, so that the head shall be lower than it. Give the body two or three slight jerks, repeated after a few seconds, to clear the throat and windpipe of water and mucus. Wipe out the mouth with a handkerchief.

Turn the patient on his back, with shoulders and head *slightly* raised by bundle of clothing placed underneath. Let some one draw forward and hold the patient's tongue by the tip with a pair of forceps or pinchers, or a folded handkerchief, so that it will not close the windpipe. Kneel beyond the patient's head, grasp the arms at or just above the elbows, draw them away from the patient's side and then up, straightening them till the hands nearly touch above the head. Do this in about the time it takes you to inhale a breath slowly. Then lower them in the same way in which they were raised, bending the elbows over the pit of the stomach with considerable pressure. This forces the air out of the lungs, while raising the arms allows it to enter them. Sixteen to eighteen respirations a minute is the proper rate, and it should be kept up for two hours at least, though it may seem fruitless. Meanwhile, if others are present, they should remove the clothing so far as may be without interfering with the respiration; surround the patient with warm, dry material, put hot-water bottles to the feet, and rub the legs with dry cloths *towards the heart*, relieving as necessary the one who is attending to the respiration. As soon as the patient is able to breathe and swallow, give stimulants, a little at a time.

ENVENOMED WOUNDS.—*Snake-Bite.*—Tie a cord or bandage tightly just above the wound, between it and the heart. Enlarge the wound, if necessary, with a knife, and suck it with the mouth. There is no danger of being poisoned through the mouth, unless the skin is broken. Cauterize the wound with lunar-caustic or a *white*-hot nail. Give large quantities of spirits with a little hot water.

Mad-Dog Bite.—Do as directed for snake-bite, excepting the spirits. Put a blister the whole length of the spine, and give a vapor-bath. Divert the patient's mind, to avoid brooding over the matter. If the dog is *unquestionably mad*, kill him at once; but, if there is any doubt, secure him and let him be well fed and cared for till the doubt is dispelled.

Insect-Bites.—They are painful at first, but seldom give much trouble afterward. Bathe them with ammonia and water, or extract of witch-hazel, or apply soft mud.

FAINTING.—Place the patient flat on the back. Allow access of fresh air. Sprinkle a little water on the face, and see that the neck-wear is loose.

FROZEN PARTS should be gently rubbed, *in a cold room*, with snow or cold towels, until the frost is out and they are no longer stiff. Do not bring the person at once into a warm place. If he has become insensible with the cold, it may be necessary, after removing the frost from the limbs, to resort to artificial respiration, as explained under drowning.

LIGHTNING.—Loosen the clothing and dash cold water on one who is struck.

POISONS.—*Send for the Doctor.*—Find out what the poison taken *is*, if it can be done, without delay or uncertainty. If it is a corrosive poison (acids, lye, corrosive sublimate), or if you think the stomach has little in it, give a tumblerful of sweet oil or milk, or white of egg stirred up in water.

Next—or at first if the stomach contained much liquid, and the poison was not corrosive—induce vomiting in the following ways: Tickle the back of the mouth with the finger, or give a teaspoonful of mustard in a tablespoonful of warm water, or give a pint of lukewarm water. The vomiting can usually be kept up until the stomach is clear.

VETERINARY.

HOW TO GIVE MEDICINES.—Although apparently a most simple operation, it is not every farmer who has very clear knowledge of the best means for the administration of medicines to his various animals, and there are very few books on farming that give details on the subject. The most ready manner of giving medicinal substances is by mixing them with the food or with the drink. This, however, is not always practicable, as the animal may refuse the mixture, or may be too weak to make the effort to take it. It must, then, be given by ball, or by drench from a horn or bottle.

The ball is the most convenient form of administering medicine to a horse when he will not take it in food. The ball should be prepared with oil, rather than with syrup; and, both in size and shape should resemble a small hen's egg. One person can give it by standing at the right shoulder of the animal when backed into a stall. With the left hand draw the tongue out gently upon the right side, not pulling it, but simply pressing it upon the lower jaw. The ball held between the tips of the fingers of the right hand, is conveyed into the posterior portion of the mouth, and the hand quickly withdrawn, and the tongue liberated. If the ball is not seen to pass down the gullet on the left side of the throat, a gentle blow on the chin will cause the animal to swallow, or water may be offered. Where the animal is at all refractory or vicious, it may be necessary in some cases to hold the jaws open by the balling-iron—an instrument made for this use.

In giving a drench to a horse, a horn should be used in preference to the bottle, for fear of breakage. Standing at the right shoulder, raise the head with the left hand under the jaw, and with the right hand pass the lip of the horn into the side of the mouth, and empty its contents, the head being kept up until they are swallowed. If the animal is violent, place a twitch upon the nose, to be held by an assistant; or, if he refuses to open the mouth, the tongue may be gently held to one side, the horn introduced, quickly emptied, and the tongue liberated at once. Under all circumstances, the greatest gentleness must be exercised. Nothing can be gained by impatience or by harsh treatment. For the ox or cow liquid medicine is preferable, given from the bottle rather than the horn. The bottle is more manageable, and one is less tempted to use force to open the jaws, and perhaps thus lacerate the tongue also. Elevate the head only enough to prevent the liquid running from the mouth. The bottle should not be pushed back far into the throat. The tongue should be left free. The following is a very neat and efficacious method: If standing, place the left side of the animal against a wall, and standing on the right side seize hold of the upper jaw by passing the left arm over the head and bending the latter far round to the right, slightly elevating it. With the right hand pour the contents of the bottle into the mouth at its angle, using the least possible force.

TREATMENT OF A CALF.—The use of ointments after castration is a pernicious practice. If the operation is successfully performed, Nature may be left to herself, provided the animals are healthy to commence with, and a wholesome habitation is subsequently provided for them. A little carbolic acid sprinkled over the floor of the shed is all that is needed to ensure recovery.

SCOUR IN SUCKLING CALVES.—The calves come all right, appear healthy for about twenty-four hours after calving, then are attacked with scour, seem to be in much pain for a day or two, then die of inflammation, their eyes much sunken. The cows are fed on grains, cut hay and straw, roots, and a little cake; very few grains before calving. Roots should be given sparingly to pregnant cows, and carefully selected so as to exclude such as are in any way unsound. We would also advise you to abandon the use of grains, unless they are very fresh, and in no case to allow them at such a time in large quantities. A little sweet hay chaff, with a plentiful supply of cake, meal and bran, forms a good and wholesome diet at this period. Care should also be taken to avoid undue excitement, exertion, or fright, in the cow previous to parturition, all of which are capable of rendering the milk unfit for food.

SCOUR in sheep, but more especially in lambs, is often caused by various parasitic worms attaching themselves to the inner surface of the stomach and bowels. As a cure, no better or simpler remedy can be had than turpentine. A sheep is very easily choked, and the administration must be done with great care. The turpentine (¼ to ½ oz.) should be thoroughly soaked into a little dry meal, and this again mixed in cold gruel, oil, or even water, and may then be given with perfect safety. The turpentine at the same time destroys those long white hair-like worms in the windpipe which cause husk or hoose, and which are so common amongst lambs. Their presence is evinced by a peculiar cough.

A FEVER DRAUGHT for horses, to use instead of bleeding when feverish symptoms appear:—Spirits of nitric ether, 2 ounces; tincture of aconite, 10 drops—to be given in a pint of cold water.

A DIURETIC BALL FOR HORSES, to use in cases of swelled legs, cracked heels, etc.:—Nitrate of potash, 2 drachms; powdered resin, 1 drachm; Barbadoes aloes, 2 drachms; linseed meal, 2 drachms. Treacle, as much as may be necessary to make a ball.

"PINK EYE" is an infectious equine fever, better known as "influenza." The sick should be at once separated from the healthy, and placed in a clean, well-ventilated loose box. Warm clothing should be applied to the body, according to the temperature of the atmosphere. Let the manger be washed out daily, and the food be given in repeated small quantities. Scalded bran, oats or malt, carrots and sweet hay, may be allowed as required. Diffusible stimulants, such as the preparations of ether and ammonia, may be administered when the fever runs high. In mild cases a little chlorate of potash in the water night and morning may be all that is necessary to restoration to health. Good nursing, warm mashes, warm stables in winter time.

NASAL GLEET.—There is no danger of simple nasal gleet turning to "glanders" so long as the horse is not exposed to the contagion of the latter. Better seek the aid of a competent veterinary surgeon, who will most likely advise you to have the face trephined —*i. e.*, saw out one or more pieces of bone, so as to allow of the sinuses of the face and cavities of the nose being washed out daily with a five per cent. solution of carbolic acid or some other antiseptic agent. It may at the same time be found advisable to administer some such astringent tonic as sulphate of iron or copper in two-drachm doses twice a-day.

RHEUMATISM.—If you are satisfied that your horse is the subject of rheumatism, let the part be well rubbed with soap liniment and belladonna twice daily, in the proportion of four ounces of the former to two drachms of the extract of the latter. It should then be protected from cold by ample clothing. A mild dose of physic may afterwards be administered, and when it has ceased to operate, let three drachms of the iodide of potassium be given morning and evening, in half a pint of water.

THE HORSE.

A FARMER'S HORSE.—One of the most important wants of the farmer is a horse that will answer all the diversified purposes of farm life. It is easy enough for a drayman to procure a horse that will suit him—a heavy, slow-moving, docile horse is all that he requires, and such horses are bred all over the country. The professional man, wanting a light, active horse, weighing about 1,000 lbs., able to go a mile in three minutes, and with considerable style, is able to procure it from almost any establishment for breeding roadsters. Any one desiring a first-class carriage horse can also be served, for carriage horses are bred upon many farms. A farmer does not want simply a roadster, a carriage horse, or a draught horse; he wants the qualities of all these different horses combined in one animal.

The farmer wants a horse that is able to haul the heaviest loads on the farm or in going to market, and the same animal must be fast enough to answer the demands of business or pleasure. The small farmers in this country do not keep more than three or four horses. A farmer with from 100 to 200 acres will keep from three to six horses. A farmer does not keep a horse to work on the farm, another to drive upon the road; not at all—his horses are for work or pleasure indifferently. The horses of this country answer this description of the general purpose horse to a certain extent, but are deficient in weight. Horses that weigh under 1200 lbs. are not the best draught horses in the world. Our agricultural machinery is usually too much for a team of two horses weighing under 2400 lbs. Sulky ploughs, pulverizers, and harvesters very often require more than two horses to operate them successfully. Our farmers are already awake to the defects of our horse stock, and efforts are made in all directions to improve our horses. The means adopted is the introduction of a class of heavier horses.

EXAMINATION OF HORSES.—Stand in front of a horse, to see how his limbs are formed, the width of his chest, the depth and fulness of his bosom, all anomalies of position in his fore legs being carefully registered. Examine the mouth for age. At 4 years old tushes appear; at 5 years he has a full mouth, tushes top and bottom, corner teeth shelly; at 6, marks disappear in the two centrals, inside or posterior wall of the corner teeth is lower than the anterior wall or front of the teeth; at 7, two more marks disappear in the two laterals, corner teeth level: at 8, marks disappear in the corner teeth; he is level-mouthed at 9 years old.

The eye is next observed. For ophthalmia, cataract, &c., quite a vet.'s question. Feel the crest for condition—firm and muscular. Examine the poll for poll-evil, the withers for fistula and as to character, fine withers (high or low, as the case may be, and in

keeping with the class) or undue coarseness. Shoulders for muscularity, length and obliquity, also proportion of parts. Scapula and humerus: The humerus in a valuable horse is never by any chance horizontal, neither is the scapula short and upright. The forearm or radius (the humerus is the true arm) long, massive, muscular—powerful forearms. Knees the indices of stability. Good knees always have a well-defined, centrally situate trapezium bone, deep and long. Short cannons, flat tendons—broad, firm, and flat. No splints, no gum. Pasterns free from ringbone, no windgalls at the joint. Sesamoid bones at the upper posterior portion of the fetlock fully developed. Feet moderate in size, frogs clean, sole gently concaved. No side bones or flat feet.

Back muscular, moderate in length, loins nicely sprung, and muscular. Top of the quarter long, muscular, horizontal in the blood horse, oblique in all other classes, more or less; but positive droop and short at the top is both unsightly and indicating lack of quality. Body deep, fore and back ribs long and low, well coupled. To get a good view of the contour of the horse, stand three or four paces back, observe the muscularity of his haunches, the position of his stifle, and proceed down his thighs and second thighs, which should be let down well into the hock. Hocks clean, prominent os calcis or point of the hock, and broad both above and below. The metatarsals or hind cannons short, flat and straight. Hind pasterns moderately long. Feet sound, soles concave, medium frogs. Now stand behind the horse and view his quarters, that they and his gaskins, or second thighs, are nicely let down and muscular. Then satisfy yourself about the "set on" of his head and tail, the fullest development of sheath and dock, also the graceful curve and development of his throat. Groom now runs the horse on—gently—leaving his head free. Good action is truth in action; brilliant it may be, but it is never excessive, nor exaggerated in the forehand at the expense of the hind-quarters. Brilliancy owes its origin to "courage," as opposed to "heat." A hot horse "fighrs;" a high-couraged horse "goes." Freedom in action can alone be found in sound horses. The walk must be perfect at the lift, well executed in the stay, grounding flat and firm; the trot true, level, and straight, with liberty and equal force. The gallop: the hind legs brought well under, his fore legs got neatly away. He should gallop low or near the ground. This briefly and imperfectly touches the judgment of the horse in health and for sale, which practice alone can make the buyer.

STABLE HINTS—1. Let your stable be well drained, and sufficiently lighted. The vapours from a damp, putrid floor, and the sudden change from darkness to light will almost to a certainty cause blindness. 2. Let the floor of the stalls be quite flat and level. Standing on a sloping place is very painful, and causes lameness by straining the ligaments and membranes. It also produces grease and sore heels. 3. Every stall should be at least six feet wide and nine feet long. This will enable the horse to turn around without bruising himself, and to lie down and stretch himself with comfort. 4. Let the stalls be separated by partitions, not by bars. They prevent the horses from fighting and kicking each other. 5. Let proper openings be made just under the ceiling, to permit the hot foul air to escape, and proper open-

ings at the bottom of the wall to admit fresh air. Impure and confined air will cause broken wind. 6. The fresh air should enter through a number of small holes, rather than a large hole, such as an open window. That prevents draughts, which cause chills and coughs. 7. The temperature of a stable should be that of a sitting-room or parlor; not over seventy degrees in summer, nor under forty-five degrees in winter. Hot, close, or foul stables will bring on glanders or inflammation, while a very cold or damp one may cause an incurable cough, or disease of the lungs. 8. Do not keep the hay over the manger. The steam and breath of the animal make it both unpleasant and unwholesome. If the hay must be kept over the horse, the ceiling between should be of plaster. This will in some measure prevent vapours from passing up to the food. 9. Have no opening into the manger from the hay-loft. Dust is very often thrown into the horse's eyes when fed in this way, and thus blindness is begun. The breath ascends directly to the food through the opening, which at the same time pours a continual draught down on the horse's head, thus causing chills as well as bad food.

Guano—Home-made.

Save all your fowl manure from sun and rain. To prepare it for use, spread a layer of dry swamp muck (the blacker it is the better) on your barn floor, and dump on it the whole of your fowl manure; beat it into a fine powder with the back of your spade; this done, add hard wood ashes and gypsum, so that the compound shall be composed of the following proportions:—Dried muck, four bushels; fowl manure, two bushels; ashes, one bushel; gypsum, one and one-half bushels. Mix thoroughly, and spare no labor; for, in this matter, the effort expended will be well paid for. A little before planting, moisten the heap with water, or, better still, with urine; cover well over with old mats, and let it lie till wanted for use. Apply it to beans, corn, or potatoes, at the rate of a handful to a hill; and thoroughly mix with the soil before dropping the seed. This will be found the best substitute for guano ever invented, and may be depended on for bringing great crops of turnips, corn, potatoes, etc.

Easter Eggs.

The most characteristic Easter-rite, and the one most widely diffused, is the use of Pasch, or Easter eggs. They are usually stained of various colors with dye-woods or herbs. They are sometimes given as presents, sometimes kept as amulets, and sometimes eaten. In some moorland parts of Scotland it used to be the custom for young people to go out early on Pasch-Sunday and search for wild-fowls' eggs for breakfast, and it was considered lucky to find them. There can be but little doubt that the use of eggs at this season was originally symbolical of the revivification of nature, the springing forth of life in spring. From the Christian point of view, this feast of eggs has been usually considered as emblematic of the resurrection and of a future life. The custom is not confined to Christians, as the Jews used eggs in the Feast of the Passover; and we are told that the Persians, when they keep the festival of the solar new year, in March, mutually present each other with colored eggs.

LIVE STOCK BREEDING TABLES

FOR THE USE OF

BREEDERS, FARMERS AND STOCKOWNERS.

Date served.	Name of Animal.	Cow 40 Weeks	Mare 48 Weeks	Ewe 21 Weeks	Sow 16 Weeks
Jan 1		Oct 7	Dec 1	M'y 27	Ap 21
7		13	7	J'ne 3	27
14		20	14	10	May 4
21		27	21	17	11
28		Nov 3	28	24	18
Feb 1		7	Jan 1	28	22
7		13	7	July 5	28
14		20	14	12	J'ne 4
21		27	21	19	11
28		Dec 4	28	25	18
Mar 1		6	30	26	20
7		12	Feb 5	Aug 1	26
14		19	12	8	July 3
21		26	19	15	10
28		Jan 2	26	22	17
Apr 1		6	Mar 2	26	21
7		12	8	Sep 1	27
14		19	15	8	Aug 3
21		26	22	15	10
28		Feb 2	29	21	17
May 1		5	Apr 1	22	20
7		11	7	Oct 1	26
14		18	14	8	Sep 3
21		25	21	15	9
28		Mar 4	28	22	16
J'ne 1		8	May 2	25	20
7		14	8	Nov 1	26
14		21	15	8	Oct 3
21		28	22	15	10
82		Apr 4	29	22	17

Take care of the calves and the cattle will take care of themselves.

LIVE STOCK BREEDING TABLES

FOR THE USE OF

BREEDERS, FARMERS AND STOCKOWNERS.

Date served.	Name of Animal.	Cow 40 Weeks	Mare 48 Weeks	Ewe 21 Weeks	Sow 16 Weeks
July 1		Apr 7	J'ne 1	N'v 25	Oct 20
7		13	7	Dec 2	26
14		20	14	9	Nov 2
21		27	21	16	9
28		May 4	28	23	16
Aug 1		8	July 2	26	20
7		14	8	Jan 1	26
14		21	15	8	Dec 3
21		28	22	15	10
28		J'ne 4	29	22	17
Sep 1		8	Aug 2	26	21
7		14	8	Feb 2	27
14		21	15	9	Jan 3
21		28	22	16	10
28		July 5	29	23	17
Oct 1		8	Sep 1	25	20
7		14	7	Mar 3	26
14		21	14	10	Feb 2
21		28	21	17	9
28		Aug 4	28	24	16
Nov 1		8	Oct 2	26	20
7		14	8	Apr 2	26
14		21	15	9	Mar 5
21		28	22	16	12
28		Sep 4	29	23	19
Dec 1		7	Nov 1	25	22
7		13	7	May 2	28
14		20	14	9	Apr 4
21		27	21	16	11
28		Oct 4	28	23	18

Take care of the calves and the cattle will take care of themselves.

CASH DIARY

CASH RECEIVED FOR PRODUCE SOLD.

JAN.	VEGE-TABLES.	HAY AND FEED.	GRAIN.	FRUIT.	POULTRY AND EGGS.	SUNDRY. AC'TS.	TOTAL CASH RECEIVED
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
TOTAL,							

SOLD.

FOR JANUARY.

CASH PAID OUT FOR.

UNDRY. AC'TS.	TOTAL CASH RECEIVED	JAN.	LABOR	Implements and Repairs.	Seeds, Seed Grain, &c.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
		1							
		2							
		3							
		4							
		5							
		6							
		7							
		8							
		9							
		10							
		11							
		12							
		13							
		14							
		15							
		16							
		17							
		18							
		19							
		20							
		21							
		22							
		23							
		24							
		25							
		26							
		27							
		28							
		29							
		30							
		31							
		AL,							

CASH DIARY

Cash Received for Produce Sold.

Feb.	Vege-tables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry, Ac'ts.	Total Cash Received.	Feb.
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
Total,								Total,

FOR FEBRUARY.

CASH PAID OUT FOR.

LD.	TOTAL CASH RECEIVED.	FEB.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, &c.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
		1							
		2							
		3							
		4							
		5							
		6							
		7							
		8							
		9							
		10							
		11							
		12							
		13							
		14							
		15							
		16							
		17							
		18							
		19							
		20							
		21							
		22							
		23							
		24							
		25							
		26							
		27							
		28							
		29							
		AL,							

CASH DIARY

Cash Received for Produce Sold.

Mar.	Vege-tables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry. Ac'ts.	Total Cash Received
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Total,							

FOR MARCH.

CASH PAID OUT FOR.

MAR.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, &c.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

AL,

CASH DIARY

Cash Received for Produce Sold.

Apr.	Vege-tables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry. Ac'ts.	Total Cash Received.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
Total,							

Apr.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Total,

FOR APRIL.

CASH PAID OUT FOR.

TOTAL CASH RECEIVED.	APR.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, etc.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	TAL,							

CASH DIARY

Cash Received for Produce Sold.

May.	Vegetables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry Ac'ts.	Total Cash Received.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Total,							

May.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
TAL,

FOR MAY.

CASH PAID OUT FOR.

TOTAL CASH RECEIVED.	MAY.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, etc.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	TAL,							

CASH DIARY

Cash Received for Produce Sold.

June.	Vege-tables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry Ac'ts.	Total Cash Received.	June.
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
Total.								Total,

FOR JUNE.

CASH PAID OUT FOR.

TOTAL CASH RECEIVED.	JUNE.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, etc.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	TAL,							

CASH DIARY

Cash Received for Produce Sold.

July.	Vegetables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry Ac'ts.	Total Cash Received.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Total,							

FOR JULY.

CASH PAID OUT FOR.

JULY.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, etc.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL ACC'TS.	TOTAL CASH PAID OUT.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
TOTAL,							

TOTAL CASH RECEIVED.

CASH DIARY

Cash Received for Produce Sold.

Aug.	Vege-tables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry Ac'ts.	Total Cash Received.	Aug.
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
Total,								TAL,

FOR AUGUST.

CASH PAID OUT FOR.

AUG.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, &c.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
TAL,							

CASH DIARY

Cash Received for Produce Sold.

Sept.	Vege-tables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry. Ac'ts.	Total Cash Received.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
Total,							

FOR SEPTEMBER.

CASH PAID OUT FOR.

SEPT.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, &c.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

TAL,

CASH DIARY

Cash Received for Produce Sold.

Oct.	Vege-tables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry. Ac'ts.	Total Cash Received.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Total,							

Oct.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
TAL,

FOR OCTOBER.

CASH PAID OUT FOR.

OCT.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, &c.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

TOTAL CASH RECEIVED.

TAL,

CASH DIARY

Cash Received for Produce Sold.

Nov.	Vege-tables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry Ac'ts.	Total Cash Received.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
Total,							

FOR NOVEMBER.

CASH PAID OUT FOR.

TOTAL CASH RECEIVED.	NOV.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, &c.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							

OTAL,

CASH DIARY

Cash Received for Produce Sold.

Dec.	Butter.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry. Ac'ts.	Total Cash Received.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Total,							

FOR DECEMBER.

CASH PAID OUT FOR.

TOTAL CASH RECEIVED.	DEC.	LABOR.	Implements and Repairs.	Seeds, Seed Grain, etc.	HOUSEHOLD EXPENSES.	SUNDRY EXPENSES.	SPECIAL AC'TS.	TOTAL CASH PAID OUT.
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
TOTAL								

CASH SUMMARY OF MONTHLY TOTALS FOR YEAR.

Carry the totals from the previous months here, and you have your years.

Mos.	Vege tables.	Hay and Feed.	Grain.	Fruit.	Poultry and Eggs.	Sundry Ac'ts.	Total Cash Received.
Jan.							
Feb.							
Mar.							
April							
May							
June							
July							
Aug.							
Sept.							
Oct.							
Nov.							
Dec.							
Total.,							

CASH SUMMARY OF MONTHLY TOTALS FOR YEAR.

Carry the totals from the previous months here, and you have your years.

Mos.	Labor.	Implements and Repairs.	Seeds, Seed Grain, etc.	Household Expenses.	Sundry Expenses.	Special Acc'ts.	Total Cash Paid Out.
Jan.							
Feb.							
Mar.							
Apr.							
May.							
June.							
July.							
Aug.							
Sept.							
Oct.							
Nov.							
Dec.							
Total,							

LIVE STOCK ACCOUNT.

DATE.	HORSES.	CATTLE.	SHEEP.	HOGS.	HOME CONSUMPTION.	BOUGHT.	SOLD.

Commence with Stock on hand.

LIVE STOCK ACCOUNT.

Date.	Horses.	Cattle.	Sheep.	Hogs.	Home Consumption.	Bought.	Sold.

LIVE STOCK ACCOUNT.

Date.	Horses.	Cattle.	Sheep.	Hogs.	Home Consumption.	Bought.	Sold.

LIVE STOCK ACCOUNT.

DATE.	HORSES.	CATTLE.	SHEEP.	HOGS.	HOME CONSUMPTION.	BOUGHT.	SOLD.

SUMMARY LIVE STOCK AC'T.

Mos.	Horses.	Cattle.	Sheep.	Hogs.	Home Consumption.	Bought.	Sold.
Jan.							
Feb.							
Mar.							
Apr.							
May.							
June.							
July.							
Aug.							
Sept.							
Oct.							
Nov.							
Dec.							
Total,							

LIVE STOCK MEMORANDA.

SOLD.

DAIRY ACCOUNT.

JAN.	No. of Cows.	Daily Milk.	BUTTER. Made.	Used.	Sold.	CHEESE.	Daily delivery of Milk at Cheese Factory or Creamery.	REMARKS.
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
TOTAL,								

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

TAL,

DAIRY ACCOUNT.

EB.	No. of Cows.	Daily Milk.	BUTTER.			CHEESE.	Daily delivery of Milk at Cheese Factory or Creamery.	REMARKS.
			Made.	Used.	Sold.			
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								

TAL,

DAIRY ACCOUNT.

Mar.	No. of Cows.	Daily Milk.	Butter.			Cheese.	Daily delivery of Milk at Cheese Factory or Creamery.	Remarks.
			Made.	Used.	Sold.			
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
Total,								

Apr.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Total.

DAIRY ACCOUNT.

APR.	No. of Cows.	Daily Milk.	BUTTER. Made.	BUTTER. Used.	BUTTER. Sold.	CHEESE.	Daily delivery of Milk at Cheese Factory or Creamery	REMARKS.
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
TOTAL.								

DAIRY ACCOUNT.

MAY.	No. of Cows.	Daily Milk.	BUTTER. Made.	Used.	Sold.	CHEESE.	Daily delivery of Milk at Cheese Factory or Creamery.	REMARKS.
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
TOTAL,								

JUNE.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
OTAL.,

DAIRY ACCOUNT.

JUNE.	No. of Cows.	Daily Milk.	BUTTER.			CHEESE.	Daily delivery of Milk at Cheese Factory or Creamery	REMARKS.
			Made.	Used.	Sold.			
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
TOTAL.,								

DAIRY ACCOUNT.

JULY.	No. of Cows.	Daily Milk.	BUTTER. Made.	Used.	Sold.	CHEESE.	Daily delivery of Milk at Cheese Factory or Creamery.	REMARKS.	AUG.
1									1
2									2
3									3
4									4
5									5
6									6
7									7
8									8
9									9
10									10
11									11
12									12
13									13
14									14
15									15
16									16
17									17
18									18
19									19
20									20
21									21
22									22
23									23
24									24
25									25
26									26
27									27
28									28
29									29
30									30
31									31
TOTAL,									TOTAL,

DAIRY ACCOUNT.

AUG.	No. of Cows.	Daily Milk.	BUTTER. Made.	Used.	Sold.	CHEESE.	Daily delivery of Milk at Cheese Factory or Creamery.	REMARKS.
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
TOTAL,								

DAIRY ACCOUNT.

Sept.	No. of Cows.	Daily Milk.	Butter. Made.	Butter. Used.	Butter. Sold.	Cheese.	Daily delivery of Milk at Cheese Factory or Creamery.	Remarks.	Oct.
1									1
2									2
3									3
4									4
5									5
6									6
7									7
8									8
9									9
10									10
11									11
12									12
13									13
14									14
15									15
16									16
17									17
18									18
19									19
20									20
21									21
22									22
23									23
24									24
25									25
26									26
27									27
28									28
29									29
30									30
									31
Total,									Total,

DAIRY ACCOUNT.

Oct.	No. of Cows.	Daily Milk.	Butter. Made.	Butter. Used.	Butter. Sold.	Cheese.	Daily delivery of Milk at Cheese Factory or Creamery.	Remarks.
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

DAIRY ACCOUNT.

Nov.	No. of Cows.	Daily Milk.	Butter. Made.	Butter. Used.	Butter. Sold.	Cheese.	Daily delivery of Milk at Cheese Factory or Creamery.	Remarks.	Dec.
1									1
2									2
3									3
4									4
5									5
6									6
7									7
8									8
9									9
10									10
11									11
12									12
13									13
14									14
15									15
16									16
17									17
18									18
19									19
20									20
21									21
22									22
23									23
24									24
25									25
26									26
27									27
28									28
29									29
30									30
									31
Total,									Total,

DAIRY ACCOUNT.

Dec.	No. of Cows.	Daily Milk.	Butter.			Cheese.	Daily delivery of Milk at Cheese Factory or Creamery.	Remarks.
			Made.	Used.	Sold.			
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

DAIRY ACCOUNT SUMMARY.

Mos.	No. of Cows.	Daily Milk.	Butter.			Cheese.	Daily delivery of Milk at Cheese Factory or Creamery.	Remarks.
			Made.	Used.	Sold.			
Jan.								
Feb.								
Mar.								
Apr.								
May.								
June.								
July.								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
Total.								

DAIRY MEMORANDA.

MEMORANDA.

MEMORANDA.

MEMORANDA.

THE GOVERNMENT OF CANADA.

Governor-General.—His Excellency The Right Honourable Sir John C. Hamilton-Gordon, Earl of Aberdeen.

CABINET.

Sir J. S. D. Thompson, First Minister, Minister of Justice and Attorney-General of Canada.
Hon. Mackenzie Bowell, Minister of Trade and Commerce.
Sir Adolphe P. Caron, Postmaster-General.
Hon. John Costigan, Secretary of State.
Hon. G. E. Foster, Minister of Finance.
Sir C. H. Tupper, Minister of Marine and Fisheries.
Hon. John G. Haggart, Minister of Railways.
Hon. J. A. Ouimet, Minister of Public Works.
Hon. J. C. Patterson, Minister of Militia and Defence.
Hon. Thomas M. Daly, Minister of the Interior.
Hon. A. R. Angers, Minister of Agriculture.
Hon. W. B. Ives, President of the Council.
Hon. Frank Smith, Minister without Portfolio.
Hon. John Carling, Minister without Portfolio.

Members of the Government not in the Cabinet.

Hon. J. J. Curran, Solicitor-General.
Hon. N. Clarke Wallace, Comptroller of Customs.
Hon. J. F. Wood, Comptroller of Inland Revenue.

THE PROVINCIAL CABINETS.

PROVINCE OF ONTARIO.

Lieutenant-Governor.—Lieut.-Colonel the Hon. G. A. Kirkpatrick.

EXECUTIVE COUNCIL.

Attorney-General—Sir Oliver Mowat.
Commissioner of Crown Lands—Hon. A. S. Hardy.
Commissioner of Public Works—Hon. C. F. Fraser.
Secretary—Hon. J. M. Gibson.
Treasurer—Hon. Richard Harcourt.
Minister of Education—Hon. G. W. Ross.
Minister of Agriculture and Registrar—Hon. John Dryden.
Without Portfolio—Hon. E. H. Bronson.

PROVINCE OF QUEBEC.

Lieutenant-Governor.—His Honor Hon. Joseph Adolphe Chapleau.

EXECUTIVE COUNCIL.

Hon. L. O. Taillon, Premier and President of Council.
Hon. Louis Beaubien, Commissioner of Agriculture and Colonization.
Hon. E. J. Flynn, Commissioner of Crown Lands.
" T. Chase-Casgrain, Attorney-General.
" G. A. Nantel, Commissioner of Public Works.
" J. S. Hall, Treasurer.
" L. P. Pelletier, Secretary and Registrar.
" Thomas C. Chapais, without Portfolio.
" John McIntosh, without Portfolio.

PROVINCE OF NEW BRUNSWICK.

Lieutenant-Governor.——————

EXECUTIVE COUNCIL.

Premier and Attorney-General—Hon. A. Blair.
Provincial Secretary—Hon. J. Mitchell.
Surveyor-General—Hon. L. J. Tweedie.
Chief Commis. Public Works—Hon. Hy. R. Emmerson.
Solicitor-General—Hon. A. S. White.
Member of Council—Hon. Hy. A. Connell.
Member of Council—Hon. C. H. Labillois.

PROVINCE OF NOVA SCOTIA.

Lieutenant-Governor.—His Honor Malachy Bowes Daly.

EXECUTIVE COUNCIL.

President of Council and Prov. Secretary—Hon. W. S. Fielding.
Attorney-General—Hon. J. W. Longley.
Com. of Works and Mines—Hon. Chas. E. Church.
Member without office—Hon. Thomas Johnson.
" " " " Geo. H. Murray.
" " " " Colin F. McIsaac.

PROVINCE OF BRITISH COLUMBIA.

Lieutenant-Governor.—Hon. Edgar Dewdney.

EXECUTIVE COUNCIL.

President—Hon. C. E. Pooley.
Premier, Attorney-Gen. and Clerk of Executive Council—Hon. Theo. Davie.
Chief Commissioner of Lands and Works—Hon. F. G. Vernon.
Min. of Fin. & Agriculture—Hon. J. H. Turner.
M. of Ed. & Immigration, Prov. Sec. & Min. of Mines—Hon. Jas. Baker.

PROVINCE OF PRINCE EDWARD ISLAND.

Lieutenant-Governor.—J. S. Carvell, Esq.

EXECUTIVE COUNCIL.

Attorney-General—Hon. Fred'k Peters.
Commissioner of Public Works—Hon. Jas. R. McLean.
Provincial Secretary & Treasurer—Hon. A. Macmillan.
Member of Council—Hon. D. Farquharson.
" " " Alex. Laird.
" " " Peter Sinclair.
" " " Jas. W. Richards.
" " " Thomas Kickham.
" " " George Forbes.

PROVINCE OF MANITOBA.

Lieutenant-Governor—Hon. John C. Schultz.

EXECUTIVE COUNCIL.

Premier, President of the Council, Minister of Agriculture, and Immigration and Railway Commissioner—Hon. Thomas Greenway.
Attorney-General—Hon. Clifford Sefton.
Minister of Public Works—Hon. Robert Watson.
Provincial Secretary—John D. Cameron.
Provincial Treasurer—Hon. D. H. McMillan.

NORTH-WEST TERRITORIES.

Lieutenant-Governor—Hon. Charles H. McIntosh.

Executive Committee—Frederick William Gordon Haultain, John Ryerson Neff, Thomas Tweed, Hilliard Mitchell.

Indian Commissioner—Hayter Reed.

Assistant Indian Commissioner—A. E. Forget.

LEGAL HINTS.

Farmers' Law.

In a deed to agricultural property the boundaries should be clearly determined. The question, What does the farmer get? is answered by these boundaries, and the deed to a farm always includes the dwelling houses, barns and other improvements thereon belonging to the grantor, even though these are not mentioned. It also conveys all the fences standing on the farm, but all might not think it also included the fencing-stuff, posts, rails, etc., which had once been used in the fence, but had been taken down and piled up for future use again in the same place. But new fencing material just bought, and never attached to the soil, would not pass. So piles of hop poles, stored away, if once used on the land, and intended to be again so used, have been considered a part of it, but loose boards or scaffold poles, merely laid across the beams of a barn and never fastened to it, would not be, and the seller of the farm might take them away. Standing trees, of course, also pass as part of the land; so do trees blown down or cut down, and still left in the woods where they fell, but not if cut and corded up for sale; the wood has then become personal property.

If there be any manure in the barnyard or in the composed heap on the field, ready for immediate use, the buyer, ordinarily, in the absence of any contrary agreement, takes that also as belonging to the farm, though it might not be so if the owner had previously sold it to some other party, and had collected it together in a heap by itself, for such an act might be a technical severance from the soil, and so convert real into personal estate; and even a lessee of a farm could take away the manure made on the place while he was in occupation. Growing crops also pass by the deed of a farm unless they are expressly reserved, and when it is not intended to convey those it should be so stated in the deed itself; a mere oral agreement to that effect would not be valid in law. Another mode is to stipulate that possession is not to be given until some future day, in which case the crops or manures may be removed before that time.

An adjoining road is, to its middle, owned by the farmer whose land is bounded by it, unless there are reservations to the contrary in the deeds through which he derives title, or unless the local laws vest the road absolutely in the Crown or municipality. But his ownership is subject to the right of the public to the use of the road.

If a tree grows so as to come over the land of a neighbor, the latter may cut away the parts which so come over, for he owns his land and all that is above or below it. He may cut every branch or twig which comes over his land, but he cannot touch the fruit which falls to the land. The owner of the tree may enter peaceably upon the land of the neighbor and take up the branches and fruit.

Currency and Legal Tender.

The denominations are dollars, cents and mills. Gold, silver, copper and bronze coins are authorized. Gold coins of the standard of fineness of the coins of the United Kingdom, and bearing the same proportion in weight to the British sovereign which $5.00 bear to $4.86⅔, pass current for five dollars. Silver coins are legal tender to the extent of $10.00. Copper or bronze coins to the extent of twenty-five cents.

Dominion notes may be issued to the amount of $20,000,000. The Receiver-General must always hold in gold or in gold and Canadian securities guaranteed by the Government of the United Kingdom an amount equal to twenty-five per cent. of these notes. Fifteen per cent. must always be held in gold. For the other seventy-five per cent. Dominion debentures must be held. These notes are a legal tender throughout Canada except at the offices where they are payable.

Descent of Property.

Manitoba.—Intestacy.—If any intestate shall die, leaving a widow and child or children, one-third of his real and personal estate shall go to his widow and the remaining two-thirds to his child or children in equal shares.

If no issue, his whole real and personal estate shall go to his widow; and if no widow or issue, the whole shall go to his father: if no father, to mother.

New Brunswick.—The real estate of persons dying intestate descends, subject to the widow's dower, to the children of intestate or their legal representatives, and in case there be no children of the intestate, then to the next of kindred and their representatives, including those of the half-blood and their representatives.

The personal estate is divided as follows:—One-third to the widow, and the residue in equal portions to and amongst the children and such persons as legally represent them. Any child receiving any advancement of real estate in the life-time of the intestate in excess of his share of the real estate shall have the value of such excess taken into account in the distribution of the personality. If there be no children nor any legal representatives of them, one moiety shall be allowed to the widow, and the residue be distributed equally among the next of kindred of the intestate in equal degree and those who legally represent them, but there shall be no representation among collaterals after the brothers' and sisters' children. If there be no widow, it shall be divided equally amongst the children, etc.

The debts of intestate have to be paid first before any division is made.

Nova Scotia.—The real and personal estate of a person who shall die intestate shall be distributed as follows:—Realty.—To his children in equal shares, and in case of decease of any to such as shall legally represent them; if no child living at time of his death, to his other lineal descendants; if no issue, one-half to his father, one-half to widow; if no widow, all to father; if no issue, nor father, one-half to widow, and other half in equal shares to mother, brothers and sisters, and children of deceased brothers or sisters by right of representation; if no widow, whole to mother, brothers and sisters and children of deceased brothers and sisters by right of representation; if none of above named then to his next of kin in equal degree. Personalty:—To the widow, wearing

apparel, etc., for herself and minor children, and necessary sustenance for ninety days and for such further periods as judge may direct; wearing apparel of deceased to value not exceeding $40 among family of the deceased: of residue after payment of debts, funeral expenses, etc., one-third to widow, and remainder to such persons as would be entitled to real estate, and if no widow, then all to such persons.

Ontario.—(*a*) *Realty.* Since July 1st, 1886, realty descends to personal representatives, whether the deceased died testate or intestate. In case of intestacy, to be distributed in the same way as personal estate, subject to the following modifications:—

A widow is entitled to elect whether she will take dower or a distributive share of her deceased husband's real estate.

A husband entitled to curtesy may, by deed executed within six calendar months of his wife's death, elect to take curtesy in lieu of a distributive share.

The father, mother, brothers and sisters of an intestate dying without issue are to share equally in real and personal estate to the exclusion of grandfather and grandmother.

Criminal Law.

You cannot lawfully condone an offence by receiving back stolen property.

The exemption of females from arrest applies only in civil, not in criminal matters.

Every man is bound to obey the call of a constable for assistance in making an arrest.

Under the new Criminal Code, 1892, embezzlement as a distinct crime is abolished. It is now treated as theft.

Drunkenness is not a legal excuse for crime.

In the case of assault it is only necessary to prove an "offer or attempt at assault." Battery presumes physical violence.

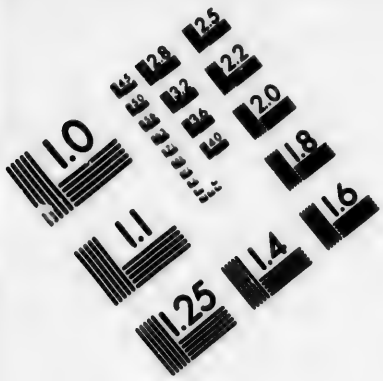
A police officer is not authorized to make an arrest without a warrant unless he is an eye-witness of the offence for which the arrest is made.

An accident is not a crime, unless criminal carelessness can be proven. A man shooting at a burglar and killing a member of his family is not a murderer. But a man who, while engaged in committing a crime, accidentally kills any person, is held guilty of murder.

Burglary can be committed only in the night time and housebreaking in the day time. The maximum punishment for burglary is imprisonment for lifetime, and for housebreaking imprisonment for fourteen years. Night time is the interval between 9 p. m. and 6 a. m., and day time the intervening hours.

False swearing is perjury in law only when wilfully done. It is a felony to bring stolen money into Canada, knowing it is stolen.

Under the Extradition Treaty between Canada and the United States, extraditable offences are:—Murder, piracy, arson, robbery, forgery, the utterance of forged paper, manslaughter, when voluntary; counterfeiting, embezzlement, larceny, receiving stolen property, knowing it to be stolen; fraud by a bailee, banker, agent, trustee, or director or member or officer of a company, made criminal by the laws of both countries: perjury or subordination of perjury; rape, abduction, child-stealing, kidnapping, burglary, housebreaking or shopbreaking, revolt, and certain other offences aboard ship, slavery.



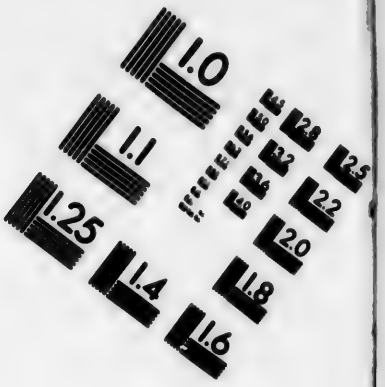
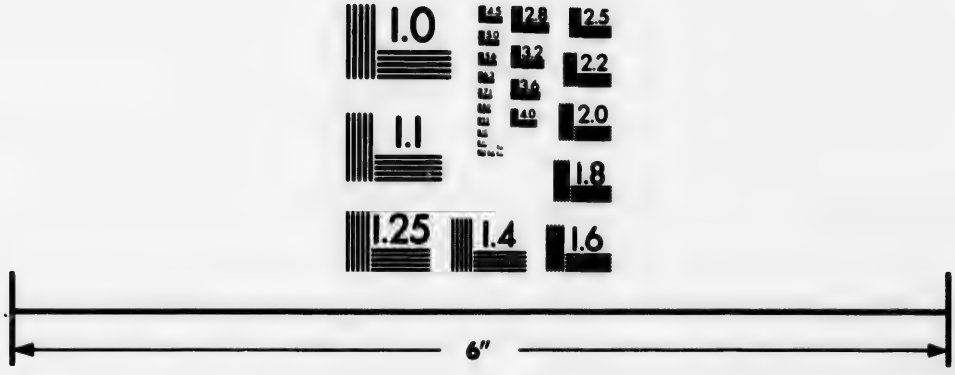


IMAGE EVALUATION
TEST TARGET (MT-3)



Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

Agreements and Contracts.

A contract or agreement is where a promise is made on one side and assented to on the other, or where two or more persons enter into engagement with each other by a promise on either side. In a written contract assent is proved by the signature or mark. In verbal agreements it may be given by a word or a nod, by shaking of hands, or by a sign. The old saw, "Silence gives consent," is often upheld in law.

Persons under age are incompetent to make contracts, except under certain limitations. Generally such persons are incapable of making binding contracts.

Don't make a contract with a person of unsound mind or under the influence of liquor, or otherwise under restraint of liberty, mind or body. Use caution in making contracts with an illiterate, blind, or deaf and dumb person, and see to it that witnesses are present.

Don't put a forced construction on a contract.

Don't suppose that you can withdraw a proposition made in writing and sent by mail after the party to whom it was made has mailed an unconditional acceptance.

Don't suppose that a conditional acceptance of a proposition is binding on the party making the proposition.

Don't forget that the courts will construe a contract according to the law prevailing where it was made.

Don't draw your own agreement. Get a solicitor to do it.

Don't sign an agreement unless you have carefully weighed its provisions, which should all be fixed and certain.

An outlawed debt is revived should the debtor make a partial payment.

Dower.

Manitoba.—A married woman has no dower in this Province.

New Brunswick.—A widow is entitled to dower of one-third of all the lands of her husband held by him during their coverture, unless she has joined him in conveying same to others.

Nova Scotia.—A widow is entitled to dower in lands (except in cases mentioned in Statute) of which her husband was seized during the marriage. A married woman may bar her dower in any lands or hereditaments, by joining with her husband in a deed or conveyance thereof in which a release of dower is contained.

Ontario.—A widow is entitled to elect whether she will take her dower or a distributive share of the estate according to the rules of devolution of personal estate. The right to dower consists in a life estate in one-third of the land. In case of dispute, the widow can have her share ascertained.

Don't make an illegal act of your agent's your own by accepting the benefit thereof.

Don't transact business through an agent unless he can show that he stands in his principal's stead in the matter in hand.

Don't, as agent, appoint sub-agents without the consent of your principal.

Don't go beyond your authority in an agency unless you are willing to become personally responsible.

Don't accept an agency, or act as an attorney in fact, in complicated matters unless your powers are clearly defined in writing.

The Law of Finding.

The general rule is that the finder has a clear title against everyone but the owner. The proprietor of a hotel or a shop has no right to demand property of others found on his premises. Such proprietor may make regulations in regard to lost property which will bind his employees, but they cannot bind the public. The finder has been held to stand in the place of the owner, so that he was permitted to prevail in an action against a person who found an article which the plaintiff had originally found, but subsequently lost. The police have no special rights in regard to articles lost, unless those rights are conferred by statute. Receivers of articles found are trustees for the owner or finder. They have no power in the absence of special statute to keep an article against the finder, any more than the finder has to retain an article against the owner.

Interest.

Throughout Canada, when no rate is stipulated for, the rate is six per cent. Parties may stipulate for a higher rate. Compound interest is not allowed unless there is a special agreement to that effect.

In *Nova Scotia*, a creditor whose debt does not carry interest, who comes in and establishes the same before the judge in chambers, is entitled to interest from the date of the judgment or order out of any assets which may remain after satisfying the costs of the cause or matter, the debts established and the interest of such debts as by law carry interest. Where there is an order for an account of legacies, interest runs at five per cent. per annum from the end of one year after the testator's death, unless otherwise ordered, or unless otherwise directed by the will. Where the security is real estate or chattels real, the parties may stipulate in writing for seven per cent. interest; and, when the security consists only of personal security or personal responsibility, ten per cent. may be stipulated for by parties in like manner as above.

General Legal Information.

An employer is not compelled to furnish an employe with a reason for his dismissal where he gives him sufficient legal notice.

A person knowingly giving a false character to an applicant for a situation is liable to an action.

Waste land by the side of a road does not belong to the adjoining free-holder, except when he owns to the middle of the road. If it is a public road, the statute of the Province vests the title in the municipality or the Crown.

A person may be arrested for debt and held to bail: (1) When he is about to abscond from the Province, with intent to defraud his creditors. (2) When he is guilty of secretion of his property with like intent.

A real estate purchase or sale is always subject to any registered liens against it which may exist at the time of transfer. Therefore the records should be searched by an intending purchaser.

No party to a contract should draw his own agreement; a solicitor should do it.

BANK HOLIDAYS.

ONTARIO, NEW BRUNSWICK AND NOVA SCOTIA. New Year's Day, Good Friday, Easter Monday, Queen's Birthday, Dominion Day, Christmas Day.

QUEBEC.—New Year's Day, Epiphany, Ash Wednesday, Good Friday, Easter Monday, Ascension, All Saints', Conception, Christmas Day, Queen's Birthday, Dominion Day.

Also, any day appointed by the Governor-General for general fast or thanksgiving.

Tariff Discrimination.

The statement is sometimes made by opponents of the National Policy, that it discriminates against Great Britain and in favor of the United States, inasmuch as the average duty on imports from Great Britain is higher than the average duty on imports from the United States. Thus, in the fiscal year ended June 30th, 1892, Canada brought from the Mother Land goods to the value of $41,348,435, upon which duties to the amount of $9,074,200 were collected, or an average of nearly 22 per cent.; whereas, upon an importation of $53,137,572 from the United States, the duties levied were only $7,814,000, or about 15 per cent., the apparent difference in favor of trade with the neighboring Republic being 7 per cent. But this difference has always existed, equally under a revenue as under a protective tariff, and it arises from two causes: (1) the preponderance of free raw material supplied from the United States, and (2) the production in that country of goods not obtainable in Great Britain, and which, in the interest of Canadian consumers, are made subject to a comparatively low revenue customs tax. Under the old fiscal system, which prevailed from 1874-9, the difference in the average rate of duty upon imports from Great Britain and from the United States was greater than now. In 1878, Canada bought goods to the value of $37,431,180 from Britain, upon which were levied duties to the amount of $6,445,985, or close upon 18 per cent.; whereas upon an importation of $48,631,739 from the United States in the same year the duties were only $4,704,500, or less than 10 per cent.

The Mammoth Cheese.

Canada's wonderful cheese, which formed part of the pyramid of Canadian dairy products at the World's Fair, Chicago, was manufactured at the Dominion Experimental Dairy Station, Perth, Lanark County, Ontario, under the supervision of Prof. James W. Robertson, Dominion Dairy Commissioner. The quantity of milk used in making it was 207,200 pounds, which is equal to the milk for one day in September of ten thousand cows. Mr. J. A. Ruddick, of the Dairy Commissioner's Staff, was the cheesemaker, assisted by representatives from twelve adjacent cheese factories. The cheese weighed *twenty-two thousand pounds net.* It was incased in the mold or hoop of steel in which it was pressed, and a pressure of more than *two hundred tons* was applied to make it perfectly solid. It measures *twenty-eight feet* in circumference by *six feet* in height. It has been sold to "Liptons," a large provision firm in England, who will exhibit it extensively throughout the country, and, by so doing, doubtless render a service to Canada in advertising this important and growing industry.

The Hudson's Bay Company

Was started in 1670 by means of a charter granted to Prince Rupert and seventeen other noblemen and gentlemen by Charles II. The original corporation was known as the "Governor and Company of Adventurers of England Trading into Hudson's Bay." This charter secured to them the absolute proprietorship, subordinate sovereignty, and exclusive traffic of an undefined territory which, under the name of Rupert's Land, comprised all the regions discovered, or to be discovered, within the entrance of Hudson's Strait. In 1821 Hudson's Bay Company and the Northwest Fur Company of Montreal (see *American Fur Trade*), amalgamated, obtaining a license to hold for twenty-one years the monopoly of trade in the vast regions lying to the west and northwest of the first-named company's grant. In 1838 udson's Bay HCompany acquired the sole right for itself, and obtained a new license for twenty-one years. This expired in 1859 and was not renewed, and the district covered by that license has since been open to all. The license to trade did not affect the original possessions of the company, which it retained until 1869, when they were transferred to the British Government for £300,000, and in 1870 they were incorporated with the Dominion of Canada. The loss of territorial control has not, however, in the least affected the Hudson's Bay Company as a trading community. Its organization is still complete. It has various posts which have from time to time been erected around the central one, at distances varying from about 200 to 500 miles. These settlements are supplied with goods, which are given to the Indians in the fall in payment for such furs as they obtain during the winter. These are transmitted in the spring to the central post, and from thence either to England or to Canada. If to the former, they are sold at auction.

The First Country to Form a Republic.

The Israelites (1425–1284 B. C.) may be said to have been the first republic, when they had no king, nor any heavenly-appointed ruler like Moses or Joshua. The second republic was founded by the Thebans, when (1140 B. C.) weary of a royal government, they converted the monarchical government into a republic, placing at the head a proctor, who incurred the penalty of death if he did not resign his office at the end of three years. Next comes Athens, which changed the form of government after the death of Codrus, whose merits rendered him so much the object of veneration that the Athenians considered no man worthy to succeed him as king, and therefore established a republic (1052 B. C.).

Killed in Various Wars.

According to a computation just issued by an eminent statistician, the cost in human life of the wars of the last forty years has been 2,253,000 souls. The Crimean war cost 750,000 men; the Italian war (1859) 45,000; the Danish war (1864), 3,000; the American civil war—the Northern States, 280,000, the Southern States, 520,000; the Austro-Prussian war, 45,000; the Franco-German war—France, 155,000; Germany, 60,000; the Turco-Russian war, 250,000; the South African wars, 30,000; the Afghan war, 25,000; the Mexican and Cochin-Chinese expeditions, 65,000; and the Bulgaro-Servian insurrection, 25,000. This list does not include mortality from sickness.

Agnosticism.

According to Herbert Spencer, a celebrated teacher of that school, agnosticism is the belief that the existence of a personal Deity can be neither proved nor disproved, because of the necessary limits of the human mind, or because of the insufficiency of the evidence furnished by psychical or physical data to warrant a positive conclusion. The words "agnosticism" and "agnostic" are derived from the Greek, signifying simply "not to know."

Boycotting.

The origin of the term "Boycotting" was as follows:—A Captain Boycott was the agent of a land owner in Ireland. His policy proved to be distasteful and offensive to the tenants, and such was their feeling in the matter that they asked the landlord to remove him. This was refused, and in retaliation the tenants and their friends refused to work for or under Boycott. They would not harvest his crops, and they made an agreement among themselves that none of them or theirs should assist or work for him in the harvest. His crops were endangered when relief arrived in the person of certain Ulster men, who, under the protection of troops, harvested the crops of Boycott. The defensive league of the tenantry was much more powerful and effective than might be supposed from the single instance of the combination referred to above. The ramifications of their compact were very numerous and extensive. For example, if anyone had dealings with Boycott or those who represented him, then no one was to have any dealings with that person. If a man worked for Boycott, he was looked upon by his old friends and neighbors as a stranger—no one would sell to or buy of him, no one was to know him. The effect of this agreement when carried to this extent was just what its authors proposed, and "Boycotting" has become a very forcible phrase.

Bachelors.

At some period of its history the legislation of almost all countries has imposed penalties on unmarried men or bachelors, on the principle that every citizen is bound to rear up children to the state. The Hebrews regarded marriage as a duty, and interpreted strictly the command, "Be fruitful and multiply." By the laws of Lycurgus criminal proceedings were authorized in Sparta not only against those who did not marry, but also against those who married so late in life as to render the procreation of healthy children unlikely. The laws of Solon also treated celibacy as a crime. From an early period penalties and disabilities were imposed on unmarried men and women in Rome; and by the laws called *Lex Julia et Papia Pappea* no unmarried person could take a legacy, whether a portion or the whole of the possessions of a deceased person, unless he got married within a prescribed time from the testator's death. Childless married persons, from the ages of twenty-five to sixty in males, and twenty to fifty in females, according to one of the provisions of this law forfeited one-half of any inheritance or legacy which might be bequeathed to them. There are numerous instances of additional or higher taxes being imposed on bachelors and spinsters in Great Britain, but probably more with a view to the revenue than with any other object.

Æsthetics.

Is a term invented about the middle of the last century by Baumgarten, a Professor of Philosophy in the University of Frankfort-on-the-Oder. to denote the science of the Beautiful, particularly of art, as the most perfect manifestation of the beautiful. Notwithstanding the fact that the Beautiful was a favorite subject of contemplation among the ancients, Baumgarten is held to be the first who considered the subject from the true scientific point of view, and therefore entitled to be called the founder of the philosophy of art. All sensuous apprehension, not in one form or manifestation only, but in every possible form or manifestation, was included in his view of the subject, and this conception he expressed by the word Æsthetics, from the Greek aisthanomai, I feel—indicating not absolute nor subjective knowledge of things, but such as is conditioned subjectively by the play of our sensibilities. Beauty was, with Baumgarten, the result of the highest and purest æsthetic perception, to the realization of which the finer portion of our nature aspires, and to trace which, through the whole sphere of art, was the work of æsthetic philosophy.

Cheese, When First Spoken of.

The Hebrew word for "cheese" is *Ghalahv*. This occurs in two passages, Genesis xviii., 8, and Exodus iii., 8, where it is translated "milk" in the English version. If the proper translation had been made, we should have cheese mentioned as early as B. C. 1898. However, the same Hebrew word occurs in 1 Samuel xvii. 18, where it is duly rendered "cheese." The passage runs: "And carry these ten cheeses unto the captain of their thousand." The date of the event to which the words quoted refer is given as 1063 B. C. An indirect reference to this commodity is also made in a passage of Job (x., 10), "Has thou not poured me out as milk and curdled me like cheese?" There is some doubt as to the date to be assigned to Job; but the authorized version places it at B. C. 1520, and if this be accepted, *this passage gives the earliest mention of Cheese.* Many classical allusions to cheese could be quoted, but they are all of a later date than those in Holy Writ.

The Origin of the "Widow's Cap."

The custom of wearing widows' caps is derived from the Romans. Widows were obliged to wear weeds for ten months, and were forbidden to marry for one year. The wearing of caps probably originated in the custom of covering the head in time of mourning and shaving off the hair.

Pounds Sterling.

In England money is chartered by the word "sterling," because in the time of Richard Cœur de Lion money coined in the east part of Germany became, on account of its purity, in especial request in England, and was called Easterling money, as all the inhabitants of that part of Germany were called Easterlings. Soon after that time some of those people, who were skilled in coining, were sent for and went to London to bring the coin to perfection. That was the foundation of the practice of designating English amounts "sterling."

Advantages of a Selection and Buying Good Seeds and Seed Grains.

BY JOHN S. PEARCE, OF LONDON.

The majority of farmers do not pay the attention they should to the changing of seed grains, selection of seeds, nor to the purchase of new and improved varieties. The loss to themselves and to the country from this cause alone is immense. Indeed, I question if it is not much greater than the annual loss to the country through the miserably poor butter that is made throughout the country and that we hear so much about.

There is a large class of farmers throughout the country whose whole aim and ambition is to get in a large acreage of crop every year, losing sight of the importance of increasing the yield per acre through better cultivation and a selection and purchase of new seeds. I venture the assertion that if this class of farmers would only exhaust their surplus energy that they now expend on getting in a big acreage of crop—if they would direct this anxiety and energy towards an increase in the yield per acre, and put in one-third to one-half less acres, they would be a great deal better off at the end of five years.

Good and thorough cultivation must go hand in hand with new and improved varieties of seed grains. It is no use buying new and improved seeds and sowing them on an old worn-out and badly cultivated field or farm, any more than putting a high, well-bred animal of any kind in the hands of a poor and indifferent feeder and stockman, or one who does not understand the care and handling of stock. Both the seeds and the stock would soon be useless under such treatment. This is, to a large extent, the cause of the failure of many who try both new seeds and high-bred stock. Both have been improved and brought up to what they are by selection, hybridizing or breeding and careful attention, and high cultivation or feeding and handling. Another trouble with a large class of farmers is that they are too penurious about buying good and expensive seeds, and stand in their own light to their own injury by so doing. They seem to begrudge the money for such seeds, forgetting what it costs to bring out such new varieties. And just here I want to point out, and I wish my readers to take to heart and bear in mind, that good seeds cannot always be judged by size, weight or color, though these requirements are necessary to a handsome sample. A good seed is one that will produce a healthy, typical plant, and to do this must have been produced by just such a plant. That "like produces like" and "blood will tell," is quite as true and applicable in plant life as with animals. Good seeds cannot be sold cheaply, as the grower has to give them patient and expensive labor, and probably years of valuable time. To produce this healthy, typical plant, he has to keep the strains uniform and true to name with one concentrated end in view, namely, that of endeavoring to place it on a still higher plane of purity, vigor and perfection. These qualities in seeds are only produced by specialists who have concentrated their time and energy in persistent looking after and studying the growth, habits, etc., of the plants and seeds under test and improvement by them. Though the cost of these may be many times greater than that of ordinary seeds, yet their value may be tenfold. There is another large class of farmers, while they are anxious and would like to try the new and expensive varieties of

seeds, won't do so, but wait till some neighbor, who has had a little more enterprise than they, has more than he needs for his own use, and then they are ready to try the new sort. This is just where they make a great mistake. They are allowing their enterprising neighbor to get the *cream* and they are content with the "*skim-milk.*" Supposing I, as a seedsman, were to adopt this policy; where would I be, or what would the wide-awake, intelligent farmer and gardener think of my mode of doing business? He would soon say, "You are behind the times, and I must find some other dealer to supply me with seeds." Then there is another view of the question—as an investment. Farmers are too slow in this matter and don't view the matter from an intelligent point, or as a financier or investor would. Supposing a farmer buys a bushel of new seed wheat for which he pays $4. The change of seed and new variety, with strong vitality and vigorous growth, will increase his yield, we will suppose, 7 to 10 bushels per acre. This increase per acre will pay for the bushel of seed and 25 per cent. on the investment, to say nothing about the extra value of the product of this bushel of wheat, which may be fifty cents to one dollar per bushel.

We know of a customer of ours who invested two years ago in a peck of Red Clawson wheat, for which he paid, after a good deal of haggling, $2.25. This year he has threshed 270 bushels from the product of his peck, and has sold his crop at a handsome profit over market price. I leave those who read to draw their own conclusion. I remarked at the commencement of this article that farmers did not pay the attention they should to the changing and selection of seed grains. This is sadly neglected by a very large class of farmers. Of the benefits from changing seed grains I need not speak, as every intelligent reader of this paper must know; if not, try the effects of a change of seed from one kind of soil to another. But there is another point to which I wish to call special attention, and that is the selection of your seed grains, and sowing clean seed. Selection, if carefully followed up, along with hand-picking, would give some very pleasing and surprising results to any one who will take the trouble to follow it up for a few years. It will repay all who take the care and trouble. There is one point more in connection with the selection of seed grains that farmers are very negligent about, and that is sowing filthy *versus* clean seed. Whatever you do, sow clean seed. Cockle and chess are more than worthless. If a man sows wheat he will reap wheat twentyfold. If he sows chess he will reap chess a hundredfold. This fact is patent to all intelligent farmers, and I am sure that all the intelligent readers of the Farmer's Advocate will not question this statement, yet I find the old theory of wheat producing chess about as hard to eradicate as it is to get all the chess out of the seed wheat.—*Farmer's Advocate.*

Origin of Pawnbroker's Sign.

It is generally held that the three golden balls used by pawnbrokers as a sign were adopted from the armorial bearings of the Medici family of Italy by the Lombard merchants, among whom were several representatives of that family. This sign was used in London in very early times by some of those merchants who had emigrated from Italy and established the first money-lending establisment in England.

POSTAL INFORMATION.

Letter Rates, &c.

Canada.—Letters posted in Canada, addressed to any place within the Dominion, 3 cents per oz. If unpaid, such letters cannot be forwarded, but will be sent to the Dead Letter Office. If partially prepaid, the letter will be forwarded to its destination and double the deficiency charged on delivery. Letters mailed at any office for delivery at or from the same office, provided that the office is not one at which free delivery by letter carriers is established, are charged 1 cent per oz., and must be at least partially prepaid; otherwise they are sent to the Dead Letter Office. Letters of this nature mailed at and for delivery from an office at which there is a free delivery by letter carriers are liable to 2 cents per ounce. All postage must be prepaid by Postage Stamps.

Post Cards.—From any place in Canada to any other place in Canada or to the United States, 1 cent each. British and Foreign, 2 cents each.

United Kingdom.—Postage on Letters, 5 cents per ½ oz., whether by Canadian or New York Steamers. If sent unpaid, double postage will be charged.

Newfoundland.—Letters, 3 cents per oz. Newspapers, from office of publication for subscribers, free. Other matter same rates, etc., as to United Kingdom.

Bermuda.—Letters, 5 cents per ½ oz. Newspapers and printed matter generally, 1 cent per 2 oz.

United States.—The rate on letters to the United States is the same as in Canada, and at least one rate must be prepaid.

Registration of Letters.

Persons posting letters containing value should be careful to require them to be Registered, and to obtain from the Postmaster a certificate of receipt for Registration.

The charge for Registration (use Registration Stamp), in addition to the Postage, is, on all classes of matter, five cents.

Both the Postage charge and Registration fee should, in all cases, be prepaid by stamp.

Registered Letter stamps have been issued of the denomination of 5 cents, which may be obtained at any Stamp Agency.

Registration Stamps cannot be used in payment of postage.

Registration is not an absolute guarantee against the miscarriage or loss of a Letter; but a Registered Letter can be traced where an Unregistered Letter can not, and the posting and delivery or non-delivery can be proven.

Book Post, &c.

A Book Packet may contain any number of separate books. Limit of weight for domestic post, 5 lbs. (unless consisting of a single book, in which case a weight of 7 lbs. is allowed); for foreign post, 4 lbs. Limit of size, two feet in length, or one foot in width or depth.

Book Packets must be open at *both ends or both sides*, and must not contain any letter or sealed inclosure.

The rate on Book Packets between any two places in Canada is 1 cent per 4 oz., which must be prepaid by stamps.

The rate to Great Britain and the United States is 1 cent per 2 ozs.

Rates of Postage on Letters and Newspapers for Foreign Places.

The rates on letters and newspapers for all parts of the world (see exception for United States and Newfoundland) are 5 cents per ½ oz., for letters, and 1 cent per 2 ozs., for papers.

Miscellaneous Matter.

Miscellaneous matter, described as under, may pass between places in the Dominion of Canada upon prepayment of the rates indicated below. The regulations of the British Post Office do not admit of the transmission by mail to the United Kingdom (or other countries beyond the sea) of miscellaneous matter as such; but a great part of the matter referred to under that head may be forwarded to the United Kingdom by Book Post:—

On all pamphlets, occasional publications, printed circulars, prices current, hand-bills, and other matter wholly in print, and on packages of seeds, cuttings, bulbs, roots, bedding plants, scions or grafts, the rate is 1 cent for each 4 ozs., or fraction thereof.

No packet of miscellaneous matter can be transmitted by mail if it exceed 5 lbs. in weight, 24 inches in length or 12 inches in width or depth.

Legal and commercial papers generally (including Bank Pass-Books) are liable to *letter rate* of postage, except when sent as parcels by Parcel Post, and the exceptions above given to matter of that class are restricted to the documents specified, such as Deeds and Insurance Policies.

Newspapers and Periodicals.

Newspapers and periodicals *printed and published in Canada*, and issued not less frequently than once a month from a known office of publication to regular subscribers or news agents in Canada, the United States and Newfoundland, are sent free; and such newspapers and periodicals are to be put up into packages and delivered into the Post Office, under such regulations as the Postmaster-General may from time to time make.

On all newspapers and periodicals posted in Canada, for delivery in the Dominion, other than those addressed to regular subscribers or news agents, from office of publication, the rate will be *one cent per 4 oz.*, to be invariably prepaid by postage stamp.

Newspapers and periodicals weighing not more than 1 oz. each may be posted singly, if prepaid by postage stamp ½ cent each.

The postage on specimen newspapers and papers and periodicals published less frequently than once a month is one cent per lb.

British and foreign publications received by mail may be reposted in Canada to subscribers at the rate of 1 cent per lb.

Transient Newspapers.

Transient newspapers and periodicals include all newspapers and periodicals posted in Canada, *other than Canada newspapers sent from the office of publication, and British newspapers posted by news agents for regular subscribers* in Canada. When addressed to any place within the Dominion, or the United States, they must be prepaid the following rates by postage stamp:—

If weighing not more than 1 oz., half a cent each.

If weighing over 1 oz., 1 cent per four oz., or fraction of four oz.

On transient newspapers addressed to the United Kingdom the rate will be one cent per 2 oz.—to be prepaid by postage stamp. Canada newspapers *posted from the office of publication* to subscribers in the United Kingdom—sent in the mails forwarded by Canadian Packet or *via* New York, must be prepaid by postage stamp at the transient paper rate of one cent per 2 oz. The English Post Office requires *each newspaper or periodical* to be prepaid by postage stamp. If sent in packages, the English Post Office declines to deliver them,

The packet may bear on the *outside* the address of the sender, in addition to the address of the person for whom it may be intended; and also a trade mark or number, and the price of the sample enclosed; *inside*, there must be no enclosure but the samples or patterns themselves. The particulars, however, of the trade mark, numbers and prices may be marked on the articles themselves instead of on the outside of the packet, at the option of the sender.

Goods sent for sale or in execution of an order, however small the quantity may be, or any article sent by one private individual to another, which are not actually trade patterns or samples, are not admissible.

United Kingdom and United States.

Patterns and samples of merchandize, when addressed to places in the United Kingdom must not exceed 5 lbs. in weight, and to the United States 8 oz., and must be prepaid by postage stamp at the following rates:—1 cent per 2 oz. or fraction of 2 oz., with a minimum prepayment of 2 cents, covering a weight of 4 oz.

Patterns and Samples Within the Dominion.

Patterns and samples of merchandise and goods for sale, not exceeding 24 oz. in weight, may be posted in Canada, to be forwarded to any place within the Dominion, on prepayment by postage stamp of a rate of 1 cent per 4 oz., under the following regulations:—

If insufficiently prepaid the packet will be forwarded, charged with double the deficient postage, provided the deficiency does not exceed 5 cents.

Packages of samples and patterns, addressed to any place in Canada, may be registered by affixing thereto stamps to the value of 5 cents in addition to the postage rate, and provided such packet be handed in to the Post Office for registration.

Patterns or samples must be sent in covers open at the ends, so as to be easy of examination. Samples, however, of seeds, drugs, etc., which cannot be sent in open covers, may be enclosed in bags of linen, or such like material, fastened in such a manner that they may be readily opened.

Useful Hints.

Register all valuable letters. Transmit money by money orders. Make complaints and inquiries in writing, and address the Postmaster-General at Ottawa. Preserve, and request correspondents to preserve, envelopes of missent or delayed letters. Send to the Postmaster-General envelopes of letters about which you seek information or make complaints. In addressing letters add the name of the *County* and *Province* in which the office addressed is located. Place stamp on the right hand upper corner of the address side. Put your own name and full address in or on the letter, to insure return if it cannot be delivered. In affixing postage stamps moisten the envelope, *not the stamp*. When stamps are moistened the gum is apt to be removed.

Parcel Post.

The charges on parcels by the Parcel Post to places within the Dominion, is 6 cents for every 4 oz. or fraction thereof (with 5 cents additional if registered). No letter must be inclosed; if any discovered, the amount paid will be forfeited, and the parcel charged at unpaid letter rates. No parcel must exceed 5 lbs. in weight, and must be prepaid by stamps.

Eye-glasses and spectacles may be sent by mail when properly put up and prepaid by parcel post or as fifth-class matter.

Parcel Post With the United Kingdom, Newfoundland, and Other British Colonies and Foreign Countries.

Closed parcels may be exchanged with the United Kingdom, Newfoundland, and most foreign countries and British colonies under the following regulations:—

1. The dimensions of a parcel must not exceed 2 feet in length by 1 foot in width or depth.

2. A parcel must not contain any explosive, combustible, or dangerous articles, nor any article of a perishable or fragile character, nor liquids or matters likely to injure other parcels or mail transmissions.

3. All parcels must be securely and substantially packed and closed.

4. Each parcel must be plainly directed, and such direction must include the name and full address of the person for whom the parcel is intended.

5. For each parcel the sender must fill up a Customs Declaration. On this form the sender will supply an accurate statement of the contents and value of the parcel, also the address thereof, with signature and place of abode of the sender. The Customs Declaration must be securely affixed by mucilage or paste to the parcel to which it relates.

Parcels from the United Kingdom or any other place beyond the Dominion, will be liable to Canadian Custom duties, and under existing regulations must be examined for the purpose by an officer of the Customs *in the presence of the persons addressed.*

Rates and limits of weight vary. See Postal Guide, or inquire at Post Office.

Prepayment by postage stamp is required in all cases. Parcels must be handed to the Postmaster; in no case should they be dropped into a letter box or other receptacle for mail matter.

Fifth-Class Matter.

Postage rate one cent per ounce or fraction of an ounce, to be prepaid by postage stamp. Miscellaneous articles of merchandise, including seeds, bulbs, etc., to United States, and generally all matter permitted to pass by mail in Canada, which is not of the nature of a letter, and therefore subject to letter rate of postage, and not entitled to be posted at a lower rate than fifth-class under one or the other classes, may pass as fifth-class when addressed to any destination within the Dominion or United States. Fifth-class matter must be so packed or put up as to be opened to examination of contents, and must not exceed 5 pounds in weight, nor 2 feet in length by 1 foot in width or depth. When passing between Canada and the United States it will be subject to Customs regulations if liable to duty. The registration charge on fifth-class matter is 5 cents in addition to postage.

Growth of Postal Business.

The growth of postal business is an evidence of increasing intelligence, business interests, and commercial facilities of a people. The following from the Canadian Post Office returns shows how the Dominion is progressing :—

	No. of Offices.	Letters Sent.	Letters per Head.
1868.....	3,638.....	18,100,000.....	5.37
1878.....	5,378.....	44,000,000.....	10.78
1880.....	5,773.....	45,800,000.....	10.86
1890.....	7,913.....	94,100,000.....	19.65
1892.....	8,288.....	102,850,000.....	20.99

Why Fishes when Stationary in Streams Float with Their Heads up Stream.

Because that position enables them to obtain without difficulty the air which they require for breathing. Oxygen is as necessary to fish for breathing purposes as it is to any animal on land. They must, too, have a constant supply, as the quantity of air contained in the water is small. The water used by fishes for respiration is received at the mouth, and by an action similar to that of swallowing, driven to the gills and expelled by the gill openings. If the fish were lying head down stream, the water thus swallowed by it could not be expelled owing to the current keeping the gill covers open and filling them, and the fish would be suffocated or drowned. A fisherman takes advantage of this fact, and keeps a large fish, when hooked on a rod and line, down stream as much as possible so as to exhaust it by choking and suffocation.

Freezing Mixtures.

4 oz. of sal ammoniac dissolved in 8 oz. of water reduces the temperature 40 degrees.

A mixture of powdered ice and snow, 72 degrees.

Snow or ice, and dilute nitric acid, 46 "

Snow and chloride of lime, 68 "

INTEREST TABLES, ETC.

THE FOLLOWING TABLE

Shows the rate with which Deposits increase at the rate of 5 % per annum, compounded half yearly:

Ten cents saved and deposited each day will, in		
1 year, amount to		$ 37 41
5 "		206 96
10 "		471 89
15 "		811 02
20 "		1245 14
25 "		1800 86
Amount deposited in 25 years	$ 912 50	
Increase by interest	888 36	
Total	$1800 86	
Twenty-five cents saved and deposited each day will, in		
1 year, amount to		$ 93 52
5 "		517 40
10 "		1179 72
15 "		2027 55
20 "		3112 85
25 "		4502 15
Amount deposited in 25 years	$2281 25	
Increase by interest	2220 90	
Total	$4502 15	
One dollar per week saved and deposited will, in		
1 year, amount to		$ 53 75
5 "		294 71
10 "		671 99
15 "		1154 93
20 "		1773 15
25 "		2564 53
Amount deposited in 25 years	$1300 00	
Increase by interest	1264 53	
Total	$2564 53	

SHORT RULES FOR CASTING INTEREST.

For finding the interest on any principal for any number of days, the answer in each case being in cents. Separate the two right-hand figures to express it in dollars and cents:—

FOUR PER CENT.—Multiply the principal by the number of days to run; separate the right-hand figure from the product, and divide by 9.

FIVE PER CENT.—Multiply by number of days, and divide by 72.

EIGHT PER CENT.—Multiply by number of days, and divide by 45.

NINE PER CENT.—Multiply by number of days; separate right-hand figure and divide by 4.

TEN PER CENT.—Multiply by number of days, and divide by 36.

TWELVE PER CENT.—Multiply by number of days; separate right-hand figure and divide by 3.

FIFTEEN PER CENT.—Multiply by number of days, and divide by 24.

EIGHTEEN PER CENT.—Multiply by number of days; separate right hand figure and divide by 2.

TWENTY PER CENT.—Multiply by number of days, and divide by 18.

A short way for reckoning interest on odd days, at any rate per cent., is as follows: Multiply the principal by the number of days, and for 6 per cent., divide by 60; for 7 per cent., by 51; for 8 per cent., by 45; for 9 per cent., by 40; for 10 per cent., by 36; for 12 per cent., by 30.

SIX PER CENT. INTEREST.

Days.	$1	$2	$3	$4	$5	$6	$7	$8	$9	$10	$20	$30	$40	$50
1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
2	0	0	0	0	0	0	0	0	0	0	1	1	1	2
3	0	0	0	0	0	0	0	0	0	0	1	1	2	2
4	0	0	0	0	0	0	0	1	1	1	1	2	3	3
5	0	0	0	0	0	0	1	1	1	1	2	2	3	4
6	0	0	0	0	0	1	1	1	1	1	2	3	4	5
7	0	0	0	0	1	1	1	1	1	1	2	3	5	6
8	0	0	0	1	1	1	1	1	1	1	3	4	5	7
9	0	0	0	1	1	1	1	1	1	1	3	4	6	7
10	0	0	0	1	1	1	1	1	1	2	3	5	7	8
11	0	0	1	1	1	1	1	1	2	2	4	5	7	9
12	0	0	1	1	1	1	1	2	2	2	4	6	8	10
13	0	0	1	1	1	1	1	2	2	2	4	6	9	11
14	0	0	1	1	1	1	2	2	2	2	5	7	9	12
15	0	0	1	1	1	1	2	2	2	2	5	7	10	12
16	0	1	1	1	1	2	2	2	2	3	5	8	11	13
17	0	1	1	1	1	2	2	2	3	3	6	8	11	14
18	0	1	1	1	1	2	2	2	3	3	6	9	12	15
19	0	1	1	1	2	2	2	2	3	3	6	9	12	16
20	0	1	1	1	2	2	2	3	3	3	7	10	13	16
30	0	1	1	2	2	3	3	4	4	5	10	15	20	25
40	1	1	2	3	3	4	5	5	6	7	13	20	26	33
60	1	2	3	4	5	6	7	8	9	10	20	30	39	49
63	1	2	3	4	5	6	7	8	9	10	21	31	41	52
90	1	3	4	6	7	9	10	12	13	15	30	44	59	74
93	2	3	5	6	8	9	11	12	14	15	31	46	61	76
100	2	3	5	7	8	10	12	13	15	16	33	49	66	82
200	3	7	10	13	16	20	23	26	30	33	66	99	1 32	1 64
300	5	10	15	20	25	30	35	39	44	49	99	1 48	1 97	2 47
Mos.														
1	1	1	2	2	3	3	4	4	5	5	10	15	20	25
2	1	2	3	4	5	6	7	8	9	10	20	30	40	50
3	2	3	5	6	8	9	11	12	14	15	30	45	60	75
4	2	4	6	8	10	12	14	16	18	20	40	60	80	1 00
5	2	5	8	10	13	15	18	20	23	25	50	75	1 00	1 25
6	3	6	9	12	15	18	21	24	27	30	60	90	1 20	1 50
7	4	7	11	14	18	21	25	28	32	35	70	1 05	1 40	1 75
8	4	8	12	16	20	24	28	32	36	40	80	1 20	1 60	2 00
9	5	9	14	18	23	27	32	36	41	45	90	1 35	1 80	2 25
10	5	10	15	20	25	30	35	40	45	50	1 00	1 50	2 00	2 50
11	6	11	17	22	28	33	38	44	50	55	1 10	1 65	2 20	2 75
12	6	12	18	24	30	36	42	48	54	60	1 20	1 80	2 40	3 00

SEVEN PER CENT. INTEREST.

CALCULATED IN DOLLARS, CENTS AND MILLS.

PRINCIPAL.		1 week.	1 mo.	3 mos.	6 mos.	1 year.
		$ c. m.	$ c. m.	$ c. m.	$ c. m.	$ c. m.
CENTS.	60	0 0 1	0 0 3	0 1 0	0 2 1	0 4 2
	70	0 0 1	0 0 4	0 1 2	0 2 4	0 4 9
	80	0 0 1	0 0 5	0 1 4	0 2 8	0 5 6
	90	0 0 1	0 0 5	0 1 6	0 3 1	0 6 3
DOLLS.	1	0 0 1	0 0 6	0 1 7	0 3 5	0 7 0
	2	0 0 3	0 1 2	0 3 5	0 7 0	0 14 0
	3	0 0 4	0 1 7	0 5 2	0 10 5	0 21 0
	4	0 0 5	0 2 3	0 7 0	0 14 0	0 28 0
	5	0 0 7	0 2 9	0 8 7	0 17 5	0 35 0
	6	0 0 8	0 3 5	0 10 5	0 21 0	0 42 0
	7	0 0 9	0 4 1	0 12 2	0 24 5	0 49 0
	8	0 1 1	0 4 7	0 14 0	0 28 0	0 56 0
	9	0 1 2	0 5 2	0 15 7	0 31 5	0 63 0
	10	0 1 3	0 5 8	0 17 5	0 35 0	0 70 0
	20	0 2 7	0 11 7	0 35 0	0 70 0	1 40 0
	30	0 4 0	0 17 5	0 52 5	1 5 0	2 10 0
	40	0 5 4	0 23 3	0 70 0	1 40 0	2 80 0
	50	0 6 7	0 26 2	0 87 5	1 75 0	3 50 0
	60	0 8 1	0 35 0	1 5 0	2 10 0	4 20 0
	70	0 9 4	0 40 8	1 22 5	2 45 0	4 90 0
	80	0 10 8	0 46 1	1 40 0	2 80 0	5 60 0
	90	0 12 1	0 52 5	1 57 5	3 15 0	6 30 0
	100	0 13 5	0 58 3	1 75 0	3 50 0	7 0 0
	200	0 26 9	1 16 7	3 50 0	7 0 0	14 0 0
	300	0 40 4	1 75 0	5 25 0	10 50 0	21 0 0
	400	0 53 8	2 33 3	7 0 0	14 0 0	28 0 0
	500	0 67 3	2 91 7	8 75 0	17 50 0	35 0 0
	600	0 80 7	3 50 0	10 50 0	21 0 0	42 0 0
	700	0 94 2	4 8 3	12 25 0	24 50 0	49 0 0
	800	1 7 4	4 66 7	14 0 0	28 0 0	56 0 0
	900	1 21 2	5 41 7	16 25 0	32 50 0	63 0 0
	1000	1 34 6	5 83 3	17 50 0	35 0 0	70 0 0

WAGES TABLE FOR DAYS AND HOURS AT GIVEN RATES PER WEEK.

Rate.		$3	$3½	$4	$4½	$5	$5½	$6	$6½	$7	$7½	$8	$9	$10	$11	$12
Hours.	1	5	6	7	8	8	9	.10	.11	.12	.13	.13	.15	.17	.18	.20
	2	.10	.12	.13	.15	.17	.18	.20	.22	.23	.25	.27	.30	.33	.37	.40
	3	.15	.18	.20	.23	.25	.28	.30	.33	35	.38	.40	.45	.50	.55	.60
	4	.20	.23	.27	.30	.33	.37	.40	.43	.47	.50	.53	.60	.67	.73	.80
	5	.25	.29	.33	.38	.42	.46	.50	.54	.58	.63	.67	.75	.83	.92	1.00
	6	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.90	1.00	1.10	1.20
	7	.35	.41	.47	.53	.58	.64	.70	.76	.82	.88	.93	1.05	1.17	1.28	1.40
	8	.40	.47	.53	.60	.67	.73	.80	.87	.93	1.00	1.07	1.20	1.33	1.47	1.60
	9	.45	.53	.60	.68	.75	.83	.90	.98	1.05	1.13	1.20	1.35	1.50	1.65	1.80
Days.	1	.50	.58	.67	.75	.83	.92	1.00	1.08	1.17	1.25	1.33	1.50	1.67	1.83	2.00
	2	1.00	1.17	1.33	1.50	1.67	1.83	2.00	2.17	2.33	2.50	2.67	3.00	3.33	3.67	4.00
	3	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	5.50	6.00
	4	2.00	2.33	2.67	3.00	3.33	3.67	4.00	4.33	4.67	5.00	5.33	6.00	6.67	7.33	8.00
	5	2.50	2.92	3.33	3.75	4.17	4.58	5.00	5.42	5.83	6.25	6.67	7.50	8.33	9.17	10.00

'ALEXANDRA' HAND-POWER CREAM SEPARATORS

- - THE BEST IN THE WORLD! - -

WILL IT PAY TO USE THEM? YES!

Twenty per cent. more and better Butter.

Pays for itself in Six Months.

SIZES. CAPACITY. PRICE.

No. 0—Easy work for a
No. 1 " "
No. 2 " "
No. 3 " "
No. 4 " "

JOHN M. FRANCIS & CO.,

CANADIAN AGENTS, LONDON, ONTARIO.